The Collected Works of Edward Sapir

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The Collected Works of Edward Sapir

I

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The Collected Works of Edward Sapir

I

General Linguistics

Volume Editor

Pierre Swiggers

With contributions by

Philip Sapir (†)
Zellig S. Harris (†)
John Lyons
Stanley Newman (†)

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EDWARD SAPIR, around 1938
(Courtesy of Sapir family)

Edward Sapir (1884–1939) has been referred to as "one of the most brilliant scholars in linguistics and anthropology in our country" (Franz Boas) and as "one of the greatest figures in American humanistic scholarship" (Franklin Edgerton). His classic book, *Language* (1921), is still in use, and many of his papers in general linguistics, such as "Sound Patterns in Language" and "The Psychological Reality of Phonemes," stand also as classics. The development of the American descriptive school of structural linguistics, including the adoption of phonemic principles in the study of nonliterary languages, was primarily due to him.

The large body of work he carried out on Native American languages has been called "ground-breaking" and "monumental" and includes descriptive, historical, and comparative studies. They are of continuing importance and relevance to today's scholars.

Not to be ignored are his studies in Indo-European, Semitic, and African languages, which have been characterized as "masterpieces of brilliant association" (Zellig Harris). Further, he is recognized as a forefather of ethnolinguistic and sociolinguistic studies.

In anthropology Sapir contributed the classic statement on the theory and methodology of the American school of Franz Boas in his monograph, "Time Perspective in Aboriginal American Culture" (1916). His major contribution, however, was as a pioneer and proponent for studies on the interrelation of culture and personality, of society and the individual, providing the theoretical basis for what is known today as symbolic anthropology.

He was, in addition, a poet, and contributed papers on aesthetics, literature, music, and social criticism.

Note to the Reader

Throughout *The Collected Works of Edward Sapir*, those publications whose typographic complexity would have made new typesetting and proofreading difficult have been photographically reproduced. All other material has been newly typeset. When possible, the editors have worked from Sapir's personal copies of his published work, incorporating his corrections and additions into the reset text. Such emendations are acknowledged in the endnotes. Where the editors themselves have corrected an obvious typographical error, this is noted by brackets around the corrected form.

The page numbers of the original publication are retained in the photographically reproduced material; in reset material, the original publication's pagination appears as bracketed numbers within the text at the point where the original page break occurred. To avoid confusion and to conform to the existing literature, the page numbers cited in introductions and editorial notes are those of the original publications.

Footnotes which appeared in the original publications appear here as footnotes. Editorial notes appear as endnotes. Endnote numbers are placed in the margins of photographically reproduced material; in reset material they are inserted in the text as superscript numbers in brackets. The first, unnumbered endnote for each work contains the citation of the original publication and, where appropriate, an acknowledgment of permission to reprint the work here.

All citations of Sapir's works in the editorial matter throughout these volumes conform to the master bibliography that appears in Volume XVI; since not all works will be cited in any given volume, the letters following the dates are discontinuous within a single volume's references. In volumes where unpublished materials by Sapir have been cited, a list of the items cited and the archives holding them is appended to the References.

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FOREWORD

In January 1982, David Mandelbaum wrote to David Sapir, suggesting that "a new volume of your father's writings might be prepared for publication in 1984, the centenary of his birth." He suggested that "it might contain some of the papers that were not included in the *Selected Writings of Edward Sapir*; perhaps some of his letters; and possibly some of the papers that have discussed his work." In April he further suggested, as possibilities, "a biographical memoir, recollections by some who knew him, an essay on his influence and continuing stimulus, selections from his poetry, selections from his letters to Lowie, Kroeber and others, and a bibliography of writings about him."

Later, in 1982, a complete list of Edward Sapir's major scholarly writings was circulated to some four dozen anthropologists and linguists, with a request that they rate each paper on a four-point scale. Some 25 replies were received. There was hardly a single paper that two or more had not rated as a "must" or "highly desirable." Also, a number of individuals expressed their preference for a "Complete Works" rather than a "Selection."

At the 1982 meeting of the American Anthropological Association, an ad hoc meeting of some 10 people was convened to discuss how to go about making a proper selection of additional papers not included in the *Selected Writings*, and where a publisher might be found. Among those present were Dell Hymes, Regna Darnell, Victor Golla, Keith Basso, Harold Conklin, Lita Osmundsen of the Wenner-Gren Foundation, and myself. After a relatively brief discussion it was unanimously recommended that, rather than a second "SWES," a "Complete Works" should be published, if at all possible. Two university presses were mentioned as possible publishers, but neither proved to be interested in a "Complete Works," and both required a significant financial contribution to support a much more limited publication.

At the same time, a joint ad hoc committee of the American Anthropological Association and the Linguistic Society of America had been established to develop plans for celebrating the centennial of Edward Sapir's birth. Its membership included the following: Dell Hymes (Chairman), William Bright, William Cowan, Regna Darnell, Paul Friedrich, Margaret Langdon, Victoria Fromkin, Joel Sherzer, and Judith Irvine.

In the meantime it had become known that plans were well advanced for an Edward Sapir Centennial Conference, to be held in Ottawa, Canada, where Edward Sapir had served as the first Chief of the Anthropological Division within the Canadian Geological Survey, Department of Mines, from 1910 to 1925. This conference, planned and organized by William Cowan, Michael K. Foster,

and Konrad Koerner, was held on October 1–3, 1984, and was very well attended by participants from Canada, the United States, and Japan. The Conference Proceedings were published in 1986.[1]

Not wishing to attempt to duplicate this event, Dell Hymes, then President of the Linguistic Society of America and Past President of the American Anthropological Association, and Chairman of the abovementioned ad hoc committee, agreed to have the committee assist in selecting a Board of Editors for *The Collected Works*, as well as in finding a publisher. At the 1983 meeting of the Linguistic Society of America, the ad hoc committee duly met and appointed the following to serve as a Board of Editors: William Bright, Regna Darnell, Judith Irvine, Yakov Malkiel, and myself, as Editor-in-Chief. Dr. Malkiel later found it necessary to resign, and was succeeded by Eric Hamp. Victor Golla, Richard Handler and Pierre Swiggers were added later to the Board.

Present at the annual meeting of the Linguistic Society of America that year was Dr. Marie-Louise Liebe-Harkort, the then newly appointed Editor-in-Chief of Mouton de Gruyter, a recently added division of the Berlin publishing house of Walter de Gruyter & Co., and an Americanist in her own right. Upon learning of the plans of the ad hoc committee, she met with me and indicated that she was very interested in the possibility of Mouton de Gruyter serving as the publisher of *The Collected Works*, and would be happy to propose this to the Board of Directors of Walter de Gruyter & Co. This she did and the Board gave its approval.

The Editorial Board for *The Collected Works* held its first meeting at the Berkeley Campus of the University of California, courtesy of Dr Malkiel, in July 1984, a few months before the Ottawa Centennial Conference, where, later, the Board was able to meet with Dr Liebe-Harkort, and get the project off to a successful start. During the twenty years that have passed since, the members have taken the responsibility of editing the several volumes, with the assistance of other anthropologists and linguists on those volumes devoted to a single language or group of related languages. At present, eight of the volumes have been published, with an additional five in various stages of preparation.

Funding has been received from the National Science Foundation for support of the scholarly work on six of the nine volumes devoted to specific languages or

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[1] *New Perspectives in Language, Culture, and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 October 1984)*. Edited by William Cowan, Michael K. Foster, and Konrad Koerner (SiHoLS 41). Amsterdam/Philadelphia: John Benjamins, 1986, xiv–627 p. [Reviews of the volume were published in: *Lingua e Stile* 22 (1987), 623–624 (L. Rosiello); *American Anthropologist* 90 (1988), 219 (P.K. Bock); *Historiographia Linguistica* 15 (1988), 405–409 (M.B. Emeneau); *Anthropos* 84 (1989), 269 (J.W. Burton); *Lingua* 77 (1989), 380–383 (R.H. Robins); *Tijdschrift voor Filosofie* 51 (1989), 160–162 (P. Swiggers); *Semiotica* 79 (1990), 273–300 (review article by A.S. Kaye and H. Waltz).]

groups of languages; and from the Phillips Fund of the American Philosophical Society for the project expenses of the Editor-in-Chief. We are pleased to express our gratitude to these two institutions.

The members of the Board have received assistance from a number of colleagues in anthropology and linguistics, who have worked with the volume editors and helped to edit a number of volumes, or sections within volumes. Of particular value has been the editing of previously unpublished linguistic and ethnologic materials which Edward Sapir left unfinished at the time of his death. The Editorial Board wishes to thank all these scholars who have contributed to or are contributing in this way to provide a "Complete Works."

I wish personally to thank Ms Jane McGary, Associate Editor, for her valuable help in the editing of these volumes during the past decade, as well as the members of the Board of Editors themselves, who have given much of their time and effort to seeing this project through to a successful conclusion. I also wish to thank Dr Liebe-Harkort, and her successor Dr Anke Beck, for the interest and support over the years.

Philip SAPIR
Editor-in-Chief, The Collected Works of Edward Sapir

Chronological list of Sapir's writings contained in Volume I

1907 "Herder's "Ursprung der Sprache"". *Modern Philology* 5. 109–142.
1911 "The History and Varieties of Human Speech". *Popular Science Monthly* 79. 45–67.
1912 "Language and Environment". *American Anthropologist* 14. 226–242.
1923 "An Approach to Symbolism". *The Freeman* 7. 572–573.
1924 "The Grammarian and his Language". *American Mercury* 1. 149–155.
1925 "Memorandum on the Problem of an International Auxiliary Language". *The Romanic Review* 16. 244–256.
1925 Review of Antoine Meillet – Marcel Cohen (eds.), *Les langues du monde*. *Modern Language Notes* 40. 373–375.
1925 "Sound Patterns in Language". *Language* 1. 37–51.
1926 "Philology". *Encyclopaedia Britannica*, Supplementary volumes (13th ed.) vol. 3, 112–115.
1926 Review of Otto Jespersen, *Mankind, Nation, and Individual from a Linguistic Point of View*. *American Journal of Sociology* 32. 498–499.
1927 "Language as a Form of Human Behavior". *The English Journal* 16. 421–433.
1928 Review of Roland G. Kent, *Language and Philology*. *The Classical Weekly* 21. 85–86.
1929 "The Status of Linguistics as a Science". *Language* 5. 207–214.
1929 "A Study in Phonetic Symbolism". *Journal of Experimental Psychology* 12. 225–239.
1930 *Totality*. (Linguistic Society of America, Language Monographs 6).
1931 "Communication". *Encyclopaedia of the Social Sciences* 4. 78–81. New York: Macmillan.
1931 "The Concept of Phonetic Law as Tested in Primitive Languages by Leonard Bloomfield". *Methods in Social Science: A Case Book* (ed. Stuart A. RICE), 297–306. Chicago: University of Chicago Press.
1931 "Conceptual Categories in Primitive Languages". *Science* 74. 578.
1931 "Dialect". *Encyclopaedia of the Social Sciences* 5. 123–126. New York: Macmillan.
1931 "The Function of an International Auxiliary Language". *Psyche* 11. 4–15.
1931 "Wanted: a World Language". *The American Mercury* 22. 202–209.
1932 (with Morris SWADESH) *The Expression of the Ending-Point Relation in English, French, and German*. (Linguistic Society of America, Language Monographs 10).
1933 "The Case for a Constructed International Language". *Actes du deuxième Congrès international de Linguistes, Genève, août 1931*. 86–88. Paris: Librairie d'Amérique et d'Orient Adrien Maisonneuve.
1933 "Language". *Encyclopaedia of the Social Sciences* 9. 155–169. New York: Macmillan.

1933 "La réalité psychologique des phonèmes". *Journal de Psychologie normale et pathologique* 30. 247–265.
See also 1949.
1944 "Grading, a Study in Semantics". *Philosophy of Science* 11. 93–116.
1947 "The Relation of American Indian Linguistics to General Linguistics". *Southwestern Journal of Anthropology* 3. 1–4.
1949 "The Psychological Reality of Phonemes". *Edward Sapir: Selected Writings in Language, Culture and Personality* (ed. D.G. MANDELBAUM), 46–60. Berkeley/Los Angeles: University of California Press.
[English original of 1933, "La réalité psychologique des phonèmes"]

Preface

Volumes I and II of *The Collected Works of Edward Sapir* contain Sapir's writings in the field of general linguistics, general-descriptive linguistics and historical linguistics. Volume I includes Sapir's papers in general linguistics (the papers deal with themes in the history of linguistics and the philosophy of language, with general issues in the study of language, and with the relationship between linguistics, anthropology, psychology and sociology, or they bear on the foundations of general and theoretical linguistics).[1]

Sapir's introduction to linguistics, *Language: An Introduction to the Study of Speech* (1921), is included in volume II, together with Sapir's historical-comparative papers (in the field of Indo-European and Semitic), his publications on African languages, and his progress reports on the project of a new, semantically-based grammar of English. The wide historical and comparative scope of Sapir's *Language*, with its chapters on genetic and areal relationships, on the historical forces behind the evolution of languages, and on the supposed links between language, culture and race, justifies its inclusion in volume II, although *Language* also, naturally, deals with basic concepts of general linguistics; as a matter of fact, several of Sapir's writings included in volume I either foreshadow or elaborate upon issues discussed by Sapir in his 1921 classic.

The papers contained in volume I have been arranged into six sections, roughly corresponding to six chronological stages or sequences. In section I Sapir's master thesis on Herder's views on the origin of language is reprinted. Section II contains two early papers (1911, 1912) by Sapir on the historical, cultural and social setting of languages; readers familiar with Sapir's *Language* (1921) will note the continuity between these papers and the later book. Section III, corresponding to a crucial phase in Sapir's intellectual development, includes papers and reviews of general linguistic interest. This section contains Sapir's short, but incisive review of Ogden and Richards's *The Meaning of Meaning*, Sapir's classic

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[1] For general surveys of Sapir's career and his contribution to general, theoretical, descriptive and historical linguistics and to anthropological linguistics, see: Edwin Ardener, "Edward Sapir 1884–1939", *Journal of the Anthropological Society of Oxford* 18/1 (1987), 1–12; Ann E. Berthoff, "Sapir and the Two Tasks of Language", *Semiotica* 71 (1988), 1–47; Regna Darnell, *Edward Sapir: Linguist, Anthropologist, Humanist* (Berkeley, 1990) [see Michael Silverstein, "Problems of Sapir's Historiography", *Historiographia Linguistica* 18 (1991), 181–204]; Regna Darnell – Judith T. Irvine, "Edward Sapir, January 26, 1884 – February 4, 1939", *National Academy of Sciences. Biographical Memoirs* (1997), 281–300; Maria Xosé Fernández Casas, *Edward Sapir en la linguística actual. Líneas de continuidad en la historia de la lingüística* (Verba, Anexo 54) (Santiago de Compostela, 2004); Mikio Hirabayashi, "Studies on the Concepts of Language, Culture, and Personality Expressed in Sapir's Papers", *Bulletin of Daito Bunka University: The Humanities* 21 (1983), 43–52; David J. Sapir, "Introducing Edward Sapir", *Language in Society* 14 (1985), 289–297; Michael Silverstein, "The Diachrony of Sapir's Synchronic Linguistic Description", in *New Perspectives in Language, Culture, and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 October 1984)*, edited by William Cowan, Michael K. Foster, and Konrad Koerner (Amsterdam/Philadelphia, 1986), 67–110; Pierre Swiggers, "Note sur la linguistique générale en 1921–22. Avec l'édition de deux lettres de Joseph Vendryes à Edward Sapir", *Beiträge zur Geschichte der Sprachwissenschaft* 1 (1991), 185–192, and "'Synchrony' and 'Diachrony' in Sapir's *Language* (1921)", *Neuphilologische Mitteilungen* 94 (1993), 313–322.

paper on "Sound Patterns in Language," as well as a more traditionally slanted encyclopedia article on "Philology." The papers in this section reflect major changes and developments in Sapir's personal and social life and his intellectual career, owing in part to the interest he took in psychology and psychiatry, the study of symbolism and social structures; these developments are reflected in the increasing number of publications by Sapir in these domains (see volumes III and IV of *The Collected Works of Edward Sapir*). Section IV and section V reflect Sapir's interest, in the second half of the 1920s and first half of the 1930s, in the problem of an international auxiliary language, and in the theoretical grounding of a language for international communication; Sapir's theoretical involvement in the International Auxiliary Language Association (IALA) is amply testified to by three major papers in the field of "conceptual grammar," which constitute a solid contribution to general semantics. Section VI, covering the last decade of Sapir's life, contains another of Sapir's classic papers, viz. his article on the psychological reality of phonemes, three substantial entries ("Communication," "Dialect" and "Language") from the *Encyclopaedia of the Social Sciences*, and a few papers of methodological and theoretical interest, in which very often use is made of American Indian materials (see also the various volumes of *The Collected Works of Edward Sapir* devoted to his work on American Indian languages, and especially some of the texts contained in volumes V and VI).

Almost all of the papers included in volume I were published during Sapir's lifetime; the only exceptions are "Grading, a Study in Semantics" (1944; see section V), the English version of "The Psychological Reality of Phonemes" (1949; see section VI), of which a French translation had been published earlier in 1933, and "The Relation of American Indian Linguistics to General Linguistics" (1947; see section VI). Both the French and the English version (first published in the *Selected Writings*) of the paper on the psychological reality of phonemes are reprinted here.

The texts have been either reset or anastatically reprinted; whenever necessary or relevant, editorial corrections or notes have been integrated or added. For a few papers, an offprint with Sapir's handwritten corrections was available, and was graciously put at my disposal by Philip Sapir; in such cases, Edward Sapir's corrections are explicitly mentioned. In all cases, except one (viz. "The Function of an International Auxiliary Language" [1931]; see section IV), we had access to the original publication. The page numbering of the original publication or –in the case of the just mentioned paper– of the version taken as the basis for the reprint, has been maintained. For all papers, information has been provided concerning the original publication and possible later reprints. The page references in the introductory texts are always to the page numbering of the original publication, and not to the new, continuous pagination in this volume.

The editor gratefully acknowledges the help and encouragements of Philip and Midge Sapir, and of J. David Sapir, during various stages in the preparation of this volume.

Pierre SWIGGERS

INTRODUCTION

Sapir's Life and Work: Two Appraisals (Zellig S. Harris; Stanley Newman)

Introductory Note

We found it appropriate to have this collection of Sapir's writings in general linguistics preceded by extracts from two important book reviews of the *Selected Writings*, by two major linguists from the first generation after Sapir. The latter collection, published by David G. Mandelbaum in 1949 (and several times reprinted since then), remains —in spite of some regrettable omissions— an extremely useful anthology of Sapir's major articles in linguistics, in anthropology, and in cultural and personal psychology. The *Selected Writings* received reviews in the leading linguistic and anthropological journals. Among these reviews two stand out for their penetration and insight into Sapir's approach to language, culture, society, and personality. One was written by Sapir's student Stanley Newman, the other by Zellig Harris, who was neither a student of Sapir nor of Bloomfield, but whose work was inspired by both these men. Whereas Harris's review article emphasizes the continuity and the uniformity between Sapir's study of language and his approach to culture, to society, and to the individual, Newman notes specific contributions, and pays much attention to Sapir's style and temperament. In both reviews, however, the continuity and homogeneity of Sapir's wide-ranging approach are highlighted, and the two reviewers concur in identifying *form-patterning* as the clue towards a just understanding of Sapir's perspective and intention, whatever the object of study —language, culture, society, behaviour.

Philip SAPIR – Pierre SWIGGERS

Introduction to Zellig Harris's text

Zellig Harris (1909–1992)[1] published his review of the *Selected Writings* of Edward Sapir at a time when he was already developing his transformational approach to language, having left behind him the ideas presented in his *[Methods in] Structural Linguistics*.[2] Although in his review Harris does not use the term "transformation," there is at least one passage[3] containing an allusion to what could be called transformational operations.

The entire text of Harris's review article merits rereading, but it was decided to publish only part of it, for two reasons:
(a) some passages refer directly to the specific occasion of republication of Sapir's texts in the *Selected Writings*, and would have been out of place here,
(b) given that this volume, and volume II, deal with Sapir's general linguistics, and that his anthropological and culture-psychological writings have for the larger part been published in other volumes of *The Collected Works of Edward Sapir*,[4] it was felt that only the first (also the largest) section of Harris's review article, which deals with the linguistic articles in the *Selected Writings*, should be reprinted here.

The bottom-line of Harris's review article is that Sapir's approach and methods were uniform, whether he dealt with language, culture or personality — although Sapir himself stressed the difference in time-span, evolutionary rhythm, and intrinsic content of these three objects.[5] As to the methods and working procedures of "the whole Sapir" Harris identifies three characteristic features:
(i) Sapir's capacity of extracting results from elusive data, i.e. his capacity of, and intuition of, structural depth;

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[1] For information on Zellig S. Harris's career, see the obituaries in *California Linguistic Newsletter* 23:2 (1992), 60–64 (by Bruce E. Nevin), *Newsletter of the Society for the Study of the Indigenous Languages of the Americas* 11:2 (1992), 3–4 (Victor Golla, with help from Dell Hymes and Bruce Nevin), *Orbis* 35 (1992), 346–353 (Pierre Swiggers), and *Language* 75 (1999), 112–119 (Peter H. Matthews). For a comprehensive bibliography of his writings, compiled by Konrad Koerner, see *Historiographia Linguistica* 20 (1993), 509–522.

[2] Zellig S. Harris, *Methods in Structural Linguistics* (Chicago, 1951), the book was later reprinted under the title *Structural Linguistics*.

[3] The passage in question is the following: "But the possibility of including the results (output) of one referential statement into the terms of another, by means of successive definitions, makes it possible for mathematical statements to carry a far greater communication load than linguistic statements on the same subjects."

[4] See *The Collected Works of Edward Sapir*, volumes III and IV. On Sapir's psychology of culture(s), see Judith T. Irvine (ed.), *Edward Sapir: The Psychology of Culture. A Course of Lectures*. Reconstructed and edited by J.T. Irvine (Berlin/New York, 1994); Ljiljana Bibovic, "Edward Sapir's Concept of Culture and its Present-day Implications", *International Review of Slavic Linguistics* 2 (1977), 125–152; Michael Silverstein, "Sapir's Psychological and Psychiatric Perspectives on Culture", *California Linguistic Notes* 23 (1992), 381–406.

[5] See Edward Sapir, "The History and Varieties of Human Speech" and "Language and Environment" (both reprinted in section II of this volume), and especially his book *Language* (New York, 1921 [reprinted in volume II of *The Collected Works of Edward Sapir*], pp. 229–235.

(ii) the "dramatic way" in which Sapir's conclusions followed from the data: Harris points here to Sapir's sense of holistic perspective, combined with remarkable argumentative skill;
(iii) Sapir's "sensitivity and critical independence," which appears perhaps most clearly in his treatment of modern society and the modern individual. Here lies Sapir's capacity of unraveling presuppositions, tacit convictions, and unfounded beliefs, and of making his reader conscious of the need for authentic reflection and responsible behaviour.

In discussing Sapir's methods of work in linguistics, Harris highlights the following points:
(1) Sapir's overarching interest was in discovering the *structure* of language;
(2) structure in language is, from the viewpoint of language itself, the result of processes (in fact, linguistic entities are the result of processes of change); this explains the "process-like" nature of Sapir's statements;[6]
(3) the structure of (a) language is, from the viewpoint of the linguist, the result of the structuring of "structure in language" by the linguist, who characterizes relationships between elements and processes in specific ways;
(4) apart from being characterized by a process-oriented approach, Sapir's work is characterized by the recognition of *patterning* in language; the greatness of Sapir's work lies in the establishing of "total" patterns, and in showing the interplay between organized structures at various language levels;
(5) the combination of *process* and *pattern* allowed Sapir to move constantly from form to function, and from structure to history: much of his work is both syn- and diachronic, and his linguistic analysis is never confined to pure forms, but always starts out from forms and their use(s).

Harris rightly notes that Sapir's concept of patterning made possible the distinction between *grammar* and *grammaticalness*, and grounded his interest in language as (formal) completeness, or unlimited "constructivity."

Sapir's "functional" conception of form followed from his approach to language as a form of behaviour, defined by its use as a symbolic system of reference. This system of reference is constituted by content-units and by form-units, as well as by syntactic relationships and contextual insertion. Both *units* and *relationships* are dynamic concepts for Sapir: in his analysis of word meanings, he showed the capacities of meaning, and their exploitation in use.[7] The structuring (or, if

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[6] Harris's reader is supposed to be familiar with the distinction between "item-and-arrangement" and "item-and-process" models (the item-and-arrangement model is associated with a strictly Bloomfieldian approach); the classic statement on this methodological issue is the article by Charles F. Hockett, "Two Models of Grammatical Description", *Word* 10 (1954), 210–234.

[7] Harris discusses some of the factors of meaning: absolute vs. relative comparison, graduality, directionality, (ir)reversibility.

one may venture the term, structura(liza)tion) of language and structure in language are complementary here: "The formal analysis of language is an empirical discovery of the same kinds of relations and combinations which are devised in logic and mathematics; and their empirical discovery in language is of value because languages contain (or suggest) more complicated types of combination than people have invented for logic" (Z.S. Harris, p. 301). Moreover, the linguist does not operate in isolation from the speakers of the language,[8] but makes use of the speakers' behaviour as a heuristic tool.

In his review article Harris points to the perfect continuity in Sapir's linguistic interests, ranging from language description to reflections on semantic structure (which is never approached in an a priori way), and to the interest in (the principles and conditions of) the construction of an artificial language (one that is to be effectively used, and thus correlates with a "world view").

In the last paragraph (of the section on language reprinted here), Harris deals with Sapir's diachronic work —which became increasingly important in the 1930s. Here also, patterning provides the key towards a deep and true understanding of how a particular structure came about, and underlying the patterning of (sets of) forms, there are unconscious macro-processes —for which Sapir aptly used a term from psychology, viz. drift[9]—, processes which eventually have to be explained by larger configurations in and from a distant past.

Pierre SWIGGERS

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[8] As Harris puts it: "The decision of what to include in the linguistic structure rests with the linguist, who has to work out that structure, and is simply a matter of what can be fitted into a structure of the linguistic type. The question of what activities constitute what kind of communication is largely an independent one, and is answered by observing the kind of use people make of the various communicational and expressive activities" (p. 303).

[9] See his book *Language* (1921), pp. 160–163, 165–168, 174–182, 183–193. On Sapir's concept of "drift", see Dell Hymes – John Fought, *American Structuralism* (The Hague–Paris, 1981, originally published in *Current Trends in Linguistics* vol. 13, part 2 [1975]), pp. 232–233; Yakov Malkiel, "Drift, Slope, and Slant: Background of, and Variations upon, a Sapirian Theme", *Language* 67 (1981), 535–570; Giovanna Marotta, "Sulla nozione di 'deriva' in Sapir", *Quaderni dell'Istituto di Linguistica dell'Università di Urbino* 4 (1986), 59–91; Michael Shapiro, "Sapir's Concept of Drift in Semiotic Perspective", *Semiotica* 67 (1987), 159–171; Henning Andersen, "The Structure of Drift", in H. Andersen – E.F.K. Koerner (eds.), *Historical Linguistics 1987* (Amsterdam/Philadelphia, 1990), 1–20; Michael Silverstein, "The Diachrony of Sapir's Synchronic Linguistic Description", in *New Perspectives in Language, Culture, and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 October 1984)*, edited by William Cowan, Michael K. Foster and Konrad Koerner (Amsterdam/Philadelphia, 1986), 67–110; Pierre Swiggers, "'Synchrony' and 'Diachrony' in Sapir's *Language* (1921)", *Neuphilologische Mitteilungen* 94 (1993), 313–322.

Zellig S. HARRIS

<Sapir's approach to language>*

[...] The writings of Edward Sapir are invaluable for their complete grasp of linguistics, for their approach to language and culture and personality, for the wonderful working of data which they exhibit. We all know what a never-ending source of learning and delight this was to Sapir's students and friends. [...]

<1.> DESCRIPTIVE LINGUISTICS: PROCESS; ANALYSIS IN DEPTH. Sapir puts the essential statements of modern linguistics in postulational or definitional form: 'Not only are all languages phonetic in character; they are also phonemic'; and morphemes are 'conventional groupings of such phonemes' (8–9).[1] But by the side of this, we find his characteristic approach in depth. Phonemes are presented not as a classification of phonetic events or types, but as the result of a process of selection: 'Between the articulation of the voice into the phonetic sequence ... and the complicated patterning of phonetic sequences into ... words, phrases, and sentences there is a very interesting process of phonetic selection and generalization.' And concerning the phonemic constituency of morphemes we find: 'the limiting conditions [of morphemes] may be said to constitute the phonemic mechanics, or phonology, of a particular language.' The term 'limiting conditions' aptly relates the range of morpheme construction to the range of phoneme combination.

Sapir thus sees the elements of linguistics and the relations among them as being the results of processes in language. The descriptive structure of a language can, of course, be regarded as the result of many processes of change, as de Saussure pointed out in his example of the cross section of a tree-trunk in relation to the growth and vertical axis of the tree.[2] This kind of interest appears in Sapir's Glottalized Continuants, and will be discussed below.

Process or Distribution. Sapir, however, also used this model of an 'entity as

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* Page numbers refer to <the *Selected Writings*, 1949>, without specifying the particular article involved. [...]

[2] Ferdinand de Saussure, Cours de linguistique générale 125.

a result of process' within descriptive linguistics proper. Consider, for example, those environmental ranges by virtue of which two sound types never contrast: say the fact that in a certain language no morpheme contains two vowels in succession; and that in any word which contains one morpheme ending in a vowel, followed by a second morpheme beginning with a vowel, a glottal stop is pronounced between these two vowels. When we speak in terms of distribution and classification, we would say that no morpheme contains the VV sequence, and that all morphemes which end in V before consonant or juncture have alternants ending in V? before vowel (before any following morpheme which begins with a vowel). Hence the VV sequence never occurs across morpheme junction, just as it doesn't occur within a morpheme. In contrast with this, Sapir would say that no two vowels could come together (within a morpheme), and that when a particular morpheme conjunction would have the effect of bringing two vowels together a glottal stop comes in as a protective mechanism to keep them apart. This kind of model appears in much of Sapir's grammatical work and in the work of some of his students, as for example in Newman's handsome analysis of Yokuts.[3]

We can consider this simply as a method of description, an alternative to our present formulations, which we make in terms of the classifying of occurrences. The process model has the advantage of being more dramatic, and often of reflecting the actual historical changes (the inter-morphemic glottal stop may well have been a later development).[4] It has the greater advantage of opening the way to a more subtle descriptive analysis—something always dear to Sapir's heart—by giving a special secondary status to some parts of the descriptive structure. For example, we may be missing something when we say innocently that VV does not occur across morpheme boundary (while V?V and VCV do): the V?V which we find there may not be fully equivalent to the VCV which result from morphemes ending in -VC plus morphemes beginning in V- (or from -V plus CV-); for one thing, these VCV alternate with -VC and V- when their morphemes occur separately, whereas the V?V alternate with -V and V-; for another, the frequency of V?V (differently from VCV) may be much greater in those positions where morpheme boundaries can occur than in other positions.[5] On the other hand, the process model has the disadvantage of bringing into descriptive analysis a new dimension—the relations of one distribution to another distribution—which does not fit well into the algebraic character of the present bald statements of distribution. There is need for further elaboration

[3] Stanley S. Newman, Yokuts language of California (New York, 1944).

[4] Cf. Sapir's article on glottalized continuants (225–50), and Henry M. Hoenigswald, Sound change and linguistic structure, Lg. 22.138–43 (1946).

[5] To make this more explicit: Suppose all word-initial morphemes have two or more syllables (vowels). Then the probability of finding ? rather than some other consonant after the FIRST vowel of a word is related simply to the frequency of the medial glottal stop. The probability of finding ? after the SECOND vowel is related to the frequency of the glottal stop (medial and at the end of morphemes) plus the frequency of morphemes which end with a vowel (and of morphemes which begin with a vowel). However, the probability of finding other consonants (not ?) after the second vowel is related merely to the frequency of those consonants medially and at morpheme-end.

of descriptive techniques, in order to make room for such refinements among our direct distributional statements.

The Process and its Result. We can also consider the use of the process model as an activity of the linguists who use it; and we can then say that aside from such personality reasons as may have dictated Sapir's use of it, it also occupies a determinate position from the point of view of the history of science. It seems to constitute a stage in the separation of descriptive method both from historical analysis and from the older psychologizing of grammatical forms. The older grammars did not distinguish descriptive from historical statements, so that the history of the glottal stop at word boundary would have been combined with the statement of the absence of vowel sequences there. The older grammars assigned reasons for speech forms: people said V?V (with 'intrusive glottal stop') in order to avoid VV which they did not otherwise pronounce.[6] Finally, the older grammars frequently failed to distinguish morphological from phonological considerations, so that the morphophonemic fact about V?V appearing for -V + V- would be given together with the phonemic fact about the absence of VV. The formulations in terms of process give expression to all this while at the same time separating descriptive linguistics from the rest. This is achieved by the dual character of these formulations: the 'process' of protecting the cross-boundary -V + V- yields the 'result' that V?V occurs.

The process section of this formulation takes cognizance of such factors as were brought out by the older linguistics (or by Sapir's interest in descriptive detail); the result section gives the distributional statement as an item in a separate science of distributions.[7]

Process in Language Structure. The process model led to a characterization of linguistic structures in terms of the types of process involved in them. A grammar was viewed as consisting of so much prefixation and suffixation, so much internal change or reduplication, used at such and such points.[8] Much of what was called process concerned the changes in or near a given form as its environment varied. For example, there is an internal change in *knife* (to *knive-*) when *-s* 'plural' appears in its environment. There is another internal change in *sing* (to *sang*) which can occur without any change in environment: *You sing well* ~ *You sang well.* (But if we vary the environment to *I like to* ( ), we exclude *sang* and find only *I like to sing.*) There is a process of suffixation that adds *-ed*

[6] How different Sapir's psychologism is from this will be discussed in Part 3 below. For the moment, it is worth noting that Sapir's grammatical formulations stayed within linguistic categories. In descriptive linguistics he would not say that people inserted a glottal stop so as to avoid the sequence VV, but that the glottal stop constituted, in respect of medial VV, a 'protection' (in cross-boundary position) of that non-occurrence of VV. The primacy of medial VV over the cross-boundary case is maintained, but in terms of the structure rather than in terms of people's intervention in their own speech behavior.

[7] We can say that the use of base forms in morphophonemics—as in Leonard Bloomfield's Menomini morphophonemics, TCLP 8.105–15 (1939)—is a further step from history or process toward purely distributional statements.

[8] It is interesting that Bloomfield's work, which (as suggested above) represents a later stage in this particular development, presents phonemes no longer as the result of process but as direct classification, whereas the morphology is still largely described in terms of process. Cf. the chapters on phonology and on morphology in his book Language.

to many English words without any accompanying change in environment, or when the environment is changed to include *yesterday*, but never directly after *will* or *to*: *I walk*, *I walked*, *I walked yesterday*, *I will walk*, *I want to walk*. Today we would say that *knife* and *knive* are alternants of one morpheme, and that the internal change there is a morphophonemic alternant of zero (other morphemes, like *spoon*, have no change before *-s*). We would say that *sang* consists of *sing* plus some other perfectly respectable morpheme, and that this other morpheme (change of /i/ to /æ/) is an alternant of the morpheme *-ed*.

To speak only of the presence of internal change, suffixation, reduplication in a language is to tell merely what is the phonemic history of a morpheme and its neighborhood, as the morpheme is tracked through its various environments. To speak only of the fact that some nouns have alternant forms before *-s* (or that some nouns before *-s* are complementary to other nouns not before *-s*), and that *-ed* has various alternant forms, is to give bare distributional statements with the merest nod to the phonemic composition of the morphemes.

To speak of internal change and suffixation and the like as occurring under particular environmental conditions is to give a detailed distributional statement of morphemes as phonemic groupings. This last can be described as a combining of today's distributional interests with the interest in process of Sapir (and, in morphology, Bloomfield) and various European linguists; it is a direction of development which would be fruitful in the present stage of linguistics. It would be fruitful because linguistics has at present one technique for stating the relation of phoneme to morpheme (morphemes are arbitrary combinations of phonemes) and another for stating the general relation of morpheme to utterance (utterances are composed of stated distributions of morphemes). To take greater cognizance of the phonemic composition of morphemes is to come nearer to the direct relation of phoneme to utterance (utterances are composed of stated distributions of phonemes). This goal will presumably never be reached, because there will always be arbitrary elements in the phonemic composition of morphemes. But if we can make general statements about part of this field, as by noting when the morphemes or alternants consist of added new phonemes or of repeated phonemes or of exchanged phonemes, we leave less that is arbitrary and outside our generalized statements.

<2.> LINGUISTIC STRUCTURE: PATTERN. Sapir's greatest contribution to linguistics, and the feature most characteristic of his linguistic work, was not the process model but the patterning of data. Both of these analytic approaches were of course used by many linguists beside Sapir, but Sapir made major contributions to both lines of development. For patterning we have, first of all, his famous Sound patterns in language (1925). [...]

Here he pointed out that what is linguistically significant is not what sounds are observed in a given language but under what linguistic circumstances (i.e. in what distribution) those sounds occur. The phraseology of course is pre-phonemic, but (or since) the article is one of the cornerstones of phonemic analysis.

Sapir's search for patterns pervaded not only his phonemic but also his morphological work, as anyone would know who saw him working over his large

charts of Navaho verb forms. His morphological patterning may be seen in his analysis of paradigms in his book Language (Ch. 5), and in his Navaho work, and in his published and unpublished American Indian material. His phonemic patterning is amply evident in the articles reprinted in this volume.

Since the original appearance of his articles, patterning has become an everyday matter for linguistics. Phonemic analysis seems quite obvious today. Morphological analysis is more procedural now than in Sapir's book Language (1921). Some of the earliest organized work in morphophonemic patterning was carried out by Sapir[9] or under his influence.[10]

Today the distinction between phonemic and morphophonemic patterns is quite prominent. In La réalité psychologique des phonèmes (1933; English version printed here on pp. 46–60), Sapir includes both kinds without explicit distinction. Phonemic examples (from native responses) are: writing /hi/ in Nootka for phonetic *hɛ*, *ɛ* being the allophone of *i* after *h* (54); reconstructing the Southern Paiute allophone *p* when post-vocalic *-βa'* 'at' was experimentally pronounced after pause (49; initial *p* and post-vocalic *β* are positional variants of each other); writing [p'] with prior release of oral closure and ['m] with prior release of glottal closure equivalently as /ṗ/ and /ṁ/, because the distributional features of [p'] and ['m] are equivalent (56–7; both occur at syllable beginning where clusters do not occur, neither occurs at syllable end where other types of consonants occur, plus a morphophonemic equivalence). Morphophonemic examples (from native responses) are: recognition of the difference between the phonemically identical Sarcee /dìní/ 'this one' and /dìní/ 'it makes a sound' based on the form of the stem before suffixes, e.g. /-ɨ/ 'the one who', where we find /dìná·ª/, /dìnɨt'ɨ/, morphophonemic stem *nɨt'* (52–3); writing Nootka morphemic *s-s* (with morpheme boundary between them) as morphophonemic *ss*, and phonetic [V̄s·V] as containing phonemic /s/—[s·] being the allophone of /s/ after short vowel and before vowel—even though this *ss* is phonemically /s/: in the morphophonemic writing *tsi·qšił'łassatłni* 'we went there only to speak' (containing *'as* 'to go in order to' and *sa* 'only') the *ss* is phonemically identical (and phonetically equivalent) with the /s/ of /tłasatł/ 'the stick that takes an upright position on the beach'—phonetically [tłas·atł] and with morphemic boundary *tła-satł* (54–5).

Language Classification. The variegated kinds of patterning, once recognized, invited attempts at some kind of organization. To organize the patterns of each language into a total structure of that language, and to investigate and compare the kinds of structuralization, was not possible until much more work had been done around these patterns. What was done instead by Sapir and others was to classify patterns (case system etc.) and to classify language types on this basis. To a large extent this was what Sapir did in his famous classification of (North) American Indian languages into six major groups (169–78). It is clear from the considerations explicitly presented by Sapir in this article (and also from the difficulty of conceiving any discoverable genetic relation among some of the

[9] In Sapir and Swadesh, Nootka texts 236–9 (Philadelphia, 1939).

[10] As in Morris Swadesh and C. F. Voegelin, A problem in phonological alternation, Lg. 15.7 (1939; written some years earlier).

families, for example in the 'Hokan-Siouan' group) that this classification is structural rather than genetic, though in many cases it suggests possible genetic connections that can be supported by further research.

Sapir also proposed a general method of classifying languages on the basis of types of grammatical patterning (in his book Language), but neither he nor others followed it up. For since there was no organizing principle for all patternings, such as would arise out of an analysis of the full possibilities of linguistic patterning and of their structural interrelations, the classification work was a useful but temporary way of noting what formal features occur in languages, and which of them occur together. The classification results could not in themselves be used for any further work, except to suggest distant genetic relationships as in the American Indian classification. (In contrast, if a fully organized—though not necessarily one-dimensional—classification of complete language structures is ever achieved, the results would be useful for understanding the development of linguistic systems, for discovering the limitations and further possibilities of language-like systems, etc.) The piling up of research in distribution and its patternings has made it possible by now to talk about the place of one pattern relative to others, and about the way these fit into a whole structure. With more work of this type we may be able to say wherein and to what extent two languages differ from each other, and thus approach a structural classificatory principle.

Descriptive Function. This structural limitation did not affect the general linguistic approach that was made possible by recognition of patterning. Sapir's patterning is an observable (distributional) fact which he can discover in his data and from which he can draw those methodological and psychological considerations which he cannot observe directly, such as function and relevance, or perception and individual participation. He can the more readily do this because his patterning is established not directly on distributional classification but on an analysis in depth of the way in which the various elements are used in the language. The 'way the elements are used' is equivalent to their distribution; but talking about such use gives a depth which is lacking in direct classification of environments.

Thus Sapir uses the patterning of elements in order to express their function (their functional position within the language): 'to say that a given phoneme is not sufficiently defined in articulatory acoustic terms but needs to be fitted into the total system of sound relations peculiar to the language is, at bottom, no more mysterious than to say that a club is not defined for us when it is said to be made of wood and to have such and such a shape and such and such dimensions. We must understand why a roughly similar object, not so different to the eye, is no club at all ... To the naive speaker and hearer, sounds (i.e. phonemes)[11] do not differ as five-inch or six-inch entities differ, but as clubs and poles differ. If the phonetician discovers in the flow of actual speech something that is neither "club" nor "pole", he, as phonetician, has the right to set up a "halfway between club and pole" entity. Functionally, however, such

[11] Sapir means: sounds as phonemically heard (perceived, structured) by the naive speaker and hearer.

an entity is a fiction, and the naive speaker or hearer is not only driven by its relational behavior to classify it as a "club" or a "pole," but actually hears and feels it as such' (46–7).[12]

Perception. In a related way, patterning is used as a basis for the structuring of perception. Sapir reports that English-speaking students often mistakenly hear *p*, *t*, or *k* instead of a final glottal stop; and after learning to recognize a glottal stop, they often mistakenly hear a glottal stop at the end of words ending in an accented short vowel (they write *smɛ'* for *smɛ*). He then points out (59–60) that the second type of error is simply a more sophisticated form of the first. Since words ending in accented short vowel do not occur in English, the students who fail to recognize the glottal stop in *smɛ'* cannot perceive the words as *smɛ* (since such words are out of their pattern) and therefore (selecting a consonant nearest ') hear it as *smɛk* or the like. Later, when they know about glottal stops and hear *smɛ*, they can still perceive only a word ending in a consonant and (selecting a consonant nearest zero) hear it as *smɛ'*.

This effect upon perception is claimed not only for such phonemic hearing, but also for the structuring of experience in terms of the morphological and vocabulary patterns of the language: 'Even comparatively simple acts of perception are very much more at the mercy of the social [more exactly: linguistic] patterns called words than we might suppose. If one draws some dozen lines, for instance, of different shapes, one perceives them as divisible into such categories as "straight," "crooked," "curved," "zigzag" because of the classificatory suggestiveness of the linguistic terms themselves' (162).

System. Sapir goes on to recognize patterning as one of the basic characteristics of language: 'Of all forms of culture, it seems that language is that one which develops fundamental patterns with relatively the most complete detachment from other types of cultural patterning' (164). Had he used the descriptive word 'consists of' instead of the process word 'develops', he might have gone beyond this to add that we can even use this linguistic patterning to determine what is to be included in 'language'. There are scattered bits of speech-like noises—coughing, crying, shrieking, laughing, clucking—which may or may not be considered part of 'language' on one basis or another, but which we count out of language because they do not fit into its detached patterning.

Out of all this Sapir was able to make important generalizations about language as a system. Recognition of the detachment of linguistic patterning leads to the statement that 'the patterning of language is to a very appreciable extent self-contained and not significantly at the mercy of intercrossing patterns of a non-linguistic type' (165). This explicit talk about the fact of patterning makes possible the distinction between the grammar (specific pattern) and grammaticalness (degree of patterning) of language: 'In spite of endless differences of detail, it may justly be said that all grammars have the same degree of fixity One language may be more complex or difficult grammatically than another,

[12] Note 'relational behavior' for our 'distribution'. The hearer might also classify it as a 'bad pole', so that even if the difference between the halfway sound and the regular sounds is noticed and not lost, it is nevertheless referred to (i.e. structured in terms of) the functionally (distributionally) determined points of the pattern.

but there is no meaning whatever in the statement which is sometimes made that one language is more grammatical, or form bound, than another' (9–10).

From this, Sapir could go on to an interesting formulation of the adequacy of language. We all know the statement that any language can be used as the vehicle for expressing anything. Sapir removes the air of triviality from this by saying, 'New cultural experiences frequently make it necessary to enlarge the resources of a language, but such enlargement is never an arbitrary addition to the materials and forms already present; it is merely a further application of principles already in use and in many cases little more than a metaphorical extension of old terms and meanings' (10). In other words, the adequacy of language is not simply definitional, but derives from the possibilities of extension and transference within the language structure, without either disregarding or destroying the structure. 'The outstanding fact about any language is its formal completeness ... No matter what any speaker of it may desire to communicate, the language is prepared to do his work ... Formal completeness has nothing to do with the richness or the poverty of the vocabulary ... The unsophisticated natives, having no occasion to speculate on the nature of causation, have probably no word that adequately translates our philosophic term "causation," but this shortcoming is purely and simply a matter of vocabulary and of no interest whatever from the standpoint of linguistic form ... As a matter of fact, the causative relation ... is expressed only fragmentarily in our modern European languages ... [but] in Nootka ... there is no verb or verb form which has not its precise causative counterpart' (153–5). Sapir might have continued here to point out that the work of language in communication and expression can be carried out both by grammatical form and by vocabulary (though with different effect), since one can insert *to cause to* before any English verb somewhat as one can add a causative element to every Nootka verb.[13] Hence what is important is not so much the distinction between grammatical form and vocabulary, as the fact that the distribution of grammatical elements, and so the grammatical structure, can change in a continuous deformation (the structure at any one moment being virtually identical with the immediately preceding structure), and that vocabulary can be added without limit (and changed in meaning). What we have, therefore, as the basic adequacy of language is not so much the static completeness of its formal structure, but rather its completability, or more exactly its constructivity without limit.

<3.> Language as social activity. *The fact of patterning.* A person who is interested in the various kinds and relations of patternings, for their own sake, can establish pattern and structure as bland distributional arrangements, and thence move toward the mathematical investigation of the combinatorial possibilities. Sapir, however, was interested in the fact of patterning, and what

[13] We omit here the important difference that an English verb by itself contrasts most immediately with the small class of affix combinations (e.g. verb plus *-ed*), and only secondarily with a vast class of phrasal sequences in which that verb could be set (of which *to cause to do so-and-so* is one), while a Nootka verb by itself contrasts with a few specific combinations of verb plus affix (of which the causative affix is one), and only secondarily with the large class of phrasal sequences.

could be derived from the discovery that language was so patterned a bit of human behavior. This was not only because Sapir was above all an anthropologist, but also because of the particular development in linguistic science at the time.

From de Saussure to the Prague Circle and Sapir and Bloomfield, the fact of patterning was the overshadowing interest. In the later work of this period in linguistics we find attempts to analyze and classify these patterns, but the big result was still the very existence of structure. This was the big advance in several sciences at the time. In the late depression years, when neither admiration of Russia nor war preparations in America had as yet obscured the scientific and social results of Karl Marx, Leonard Bloomfield remarked to me that in studying Das Kapital he was impressed above all with the similarity between Marx's treatment of social behavior and that of linguistics. In both cases, he said, the activities which people were carrying out in terms of their own life situations (but in those ways which were socially available) turned out to constitute tight patterns that could be described independently of what people were about. In language, they communicate, or pronounce words they have heard, but with the descriptive result of maintaining a patterned contrast between various subclasses of verbs or the like. In economic behavior, they may do various things just in order to make profit, but with the descriptive result that the producing population becomes increasingly removed from control over its production. Sapir saw this fact of patterning even more clearly—in language, in culture, and later in personality. Throughout his writings one sees how impressed he was with this fact, one which was also being stressed at the time (but with less happy success) in other social sciences. In his comments about language as patterned behavior he reached the heights of his subtlety, and pioneered a form of research which few have as yet taken up.

Talking as part of behavior. About the very act of talking he says: 'While it may be looked upon as a symbolic system which reports or refers to or otherwise substitutes for direct experience, it does not as a matter of actual behavior stand apart from or run parallel to direct experience but completely interpenetrates with it ... It is this constant interplay between language and experience which removes language from the cold status of such purely and simply symbolic systems as mathematical symbolism or flag signaling ... It is because it is learned early and piecemeal, in constant association with the color and the requirements of actual contexts, that language, in spite of its quasi-mathematical form, is rarely a purely referential organization' (11–2). This understanding of the relation of language to other experience is involved also in the view that psychological suggestion (and, in extreme form, hypnotism) is in essence the same as talking. In The psychology of human conflict (174), E.<R.> Guthrie says: 'Suggestibility is the result of learning a language. When we acquire any language, such acquisition lies in associating the sounds of the language with action. The use of suggestion is merely the use of these acquired cues ... There is no essential difference between causing a man to perform some act by suggestion and causing him to perform that act by request.' Arthur Jenness amplifies:[14] 'In the past,

[14] Hypnotism 496 (where the Guthrie quotation is given in full) = Chap. 15 of J. McV. Hunt (ed.), Personality and the behavior disorders, Vol. 1.

the subject has been drowsy when the word "drowsy" has been spoken, and the state of drowsiness has thereby become conditioned to the word "drowsy". The word "drowsy" repeated later *under the proper circumstances* tends to elicit drowsiness.'

Sapir's point has the merit that instead of referring language back to an undefined and dangerously over-used 'symbolism', he presents it as a direct item of behavior, associated with other behavior: 'If language is in its analyzed form a symbolic system of reference, it is far from being merely that if we consider the psychologic part that it plays in continuous behavior' (12).[15] In order to treat of the 'symbolic' character of language, he says that symbols 'begin with situations in which a sign[16] is disassociated from its context' (566); and he adds, 'Even comparatively simple forms of behavior are far less directly functional than they seem to be, but include in their motivation unconscious and even unacknowledged impulses, for which the behavior must be looked upon as a symbol' (566–7). Language, then, is just an extreme type (and a physiologically and structurally separable portion) of the associations and dissociations that occur in all behavior.

Sapir goes on to distinguish two characteristics (and origins, and types) of symbols: the 'substitute for some more closely intermediating type of behavior', and the 'condensation of energy' (565–6). His first or 'referential' symbolism, like telegraphic ticking, is the one we all know in science and technology;[17] his second, like the washing ritual of an obsessive, is that which occurs in psychoanalysis. In ordinary behavior, and even in language, both are blended.[18]

Forms and meanings. Sapir's interest in language as patterned behavior, in some respects continuous (associated) with other behavior and in some respects

[15] This was published in 1933. The novelty of this view may be seen from the fact that in 1929 Sapir had given it a more traditional formulation: 'If I shove open a door in order to enter a house, the significance of the act lies precisely in its allowing me to make an easy entry. But if I "knock at the door," a little reflection shows that the knock itself does not open the door for me. It serves merely as a sign that somebody is to come to open it for me' (163–4). His later understanding would suggest that the knock can be viewed instead as a tool, an indirect step in the course of getting the door opened (like the stick with which Köhler's ape knocks down the banana, or the lever with which we pry up a rock). It is part of the continuous behavior which makes the person inside unlock the door for us, or which makes him ready for our intrusion. It is not a 'substitute for shoving' but rather the equivalent for shoving in a society where people are customarily apprised of a visitor's arrival. In social situations where this is not customary (as among intimates), one indeed opens the door without knocking.

[16] For 'sign' we should say: any associated behavior, such as a noise.

[17] Note Martin Joos's statement of it in the last paragraph of his paper Description of language design, Jour. Acoustic Soc. America 22.707 (1950).

[18] It is conceivable that there might have been yet another element of symbolism in language, if the noise behavior that became dissociated had had such a relation to the situation with which it was associated as would be independently arrived at by every speaker (or by every speaker in the given culture). Such associations occur in onomatopoetic elements (14), and they would have made words more a matter of individual expression than of arbitrary social learning. Sapir found some traces of such phonetic symbolism by a neat use of the methods of experimental psychology; part of this work appears in the present volume (61–72), part is as yet unpublished.

dissociated from it (symbolic), enabled him to use readily the morphological approach current at the time. Grammars were usually organized not only on the basis of the formal (distributional) relations of elements,[19] but also on the basis of the major relations between form and meaning—such as whether there are gender or tense paradigms. Sapir accepted this as a basis for grammatical description, and used it in distinguishing language types.

This kind of consideration is quite different from the purely formal one. The formal typology would note to what extent linguistic elements have positional variants (i.e. environmentally determined alternants), what kinds of combinations of classes there are to be found, at what points in the structure we find domains of varying lengths (as against unit length of operand), and the like. The form–meaning typology notes the importance of noun classification on the basis of gender, or the like; to this Sapir added the criterion of 'the expression of fundamental syntactic relations as such versus their expression in necessary combination with notions of a concrete order. In Latin, for example, the notion of the subject of a predicate is never purely expressed in a formal sense, because there is no distinctive symbol for this relation. It is impossible to render it without at the same time defining the number and gender of the subject of the sentence' (21).

The correlation of form and meaning is, however, only one side of linguistic typology. It can tell us whether certain meanings are always either explicitly included or explicitly excluded (like the plural in *book* ~ *books*), or are undefined when absent (as in Kwakiutl, where nothing is indicated about number if no explicit plural morpheme is given). It can tell whether some meanings are very frequently indicated, as any paradigmatic morpheme like the English plural would be. It can tell what meanings are expressed together, as in the Latin example cited above. But the differences are largely in degree. As Sapir recognized, even a meaning which is not paradigmatically expressed can be expressed in any given language, even though absence of the morpheme would not then mean presence of its paradigmatically contrasted meaning (as absence of *-s* indicates singular, or absence of *-ed* and the *will*-class indicates present). The fact that a particular meaning is expressed as a grammatical category (rather than, say, in a separate noun) is of interest to cultural history (443), but is not essentially different from having the meaning expressed by any morpheme, of any class (100).

Which meanings or kinds of meaning are expressed by which kinds of structural elements (paradigmatic sets, large open classes like nouns, etc.) is nevertheless of considerable interest in discussing a language as social behavior. It may affect perception, and may in part determine what can be efficiently said in that language. Sapir pointed out, for example, that the Nootka translation for *The stone falls* would be grammatically equivalent to *It stones down* (something like the difference between *Rain is falling* and *It's raining*), and commented that such differences show a 'relativity of the form of thought' (159).

[19] E.g. what large open classes there were (such as stems, or distinct verb and noun classes) which occurred with small closed classes (such as affixes, or distinct verb and noun affixes in various environmental subclasses).

Meanings. This line of interest led to research of a purely semantic character. Around 1930, Sapir wrote three long semantic papers as preliminary researches toward an international auxiliary language: Totality (Language Monograph No. 6); The expression of the ending-point relation in English, French, and German (in collaboration with Morris Swadesh; Language Monograph No. 10); and Grading (reprinted here on pp. 122–49). We can distinguish several problems in these investigations. First, there was some analysis of the purely semantic relations among the meanings themselves. For example, Sapir says: 'Grading as a psychological process precedes measurement and counting ... The term four means something only when it is known to refer to a number which is "less than" certain others' (122). And farther on: 'Judgments of "more than" and "less than" may be said to be based on perceptions of "envelopment" ' (i.e. of successively inclusive bounds). Such analysis could be aided by the abstract study of relations in mathematics and logic (as in the relation between order and quantity which is involved on p. 124), and perhaps also by investigations along the lines of experimental psychology into basic (not culturally determined) perception and behavior.

Second, we find analysis of the precise meanings of the relevant words of a given language. Sapir was always an artist at bringing out the complexities of meanings hidden in a particular word, or in someone's use of the word in a given situation. Here he does this in a more formal way. He shows, for example, that there are two different uses of *good*, *near*, and other grading terms (126–8): referred to an absolute norm (e.g. *brilliant*, or *better* in *Thanks. This one is better*); and referred to comparison (e.g. *better* in *My pen is better than yours, but I confess that both are bad*); note that one wouldn't say *A is more brilliant than B, but both are stupid.* In this second category we have *good* in the sense of *of what quality* (*How good is it? Oh, very bad*), and *near* in the sense of *at what distance* (*How near was he? Still quite far*). Similarly, he points out that many grading terms 'color the judgment with their latent affect of approval or disapproval (e.g. "as much as" smuggles in a note of satisfaction; "only" and "hardly" tend to voice disappointment)' (139).[20]

Third, from his analysis of the total meanings which are expressed in each word, Sapir isolates various factors of meaning, chiefly the following: the dis-

[20] It is always possible, of course, to overlook various environmental factors in analyzing the meanings of words. Sapir says (140): 'if a quantitative goal is to be reached by increase, say "ten pages of reading," *more than* necessarily has an approving ring (e.g., "I have *already* read *more than three pages*," though it may actually be less than four), *less than* a disapproving ring (e.g., "I have *only* read *less than eight pages*," though it may actually be more than seven). On the other hand, if the quantitative goal is to be reached by decrease, say "no more reading to do," *more than* has a disapproving ring (e.g., "I have *still more than three pages* to do," though actually less than four remain to be done), *less than* an approving ring (e.g., "I have *less than eight pages* to do," though more than seven pages remain to be done out of a total of ten).'—If the form of the verb were taken into consideration here, it might be possible to show that the approving ring comes from the conjunction of *more* with the past tense and *less* with *to do*, the disapproving ring from *more* plus *to do* and *less* plus the past tense. To isolate the 'affect in grading', which Sapir seeks here, we extract an element 'approval' out of *more* plus past and *less* plus future, and an element 'disapproval' out of the opposite combinations.

tinction between grading with reference to a norm and grading with reference to terms of comparison (125–6), noted above; open and closed gamuts of grading with one central or two end norms (127–30); reversible and irreversible sets (132–3); direction of increase or decrease (and also goal) implied in the grading word, as in *good* : *better* versus *good* : *less good* (134–5, exemplified in fn. 20 above); the intrusion of affect in regard to the grade (and the goal) (139–44, and cf. fn. 20 above). Such isolating of 'elements of meaning' is not subject to the usual criticisms directed against semantic work, because it is an empirical linguistic investigation. It does not derive elements of meaning from some deductive system of presumed basic meanings, but discovers what elements can be separated out from the total meaning of each word; and it discovers this by comparing the various words of a semantic set, by seeing the linguistic environment in which these occur, and the social situation or meaning of each use.

All these investigations involving meaning, when carried out with the kind of approach that Sapir used, have validity and utility. The formal analysis of language is an empirical discovery of the same kinds of relations and combinations which are devised in logic and mathematics; and their empirical discovery in language is of value because languages contain (or suggest) more complicated types of combination than people have invented for logic. In much the same way, we have here an empirical discovery of elements of meaning in natural languages, instead of the seemingly hopeless task of inventing basic elements of meaning in speculative abstract semantics.[21] True, the particular elements we obtain depend on the languages considered and upon the degree and type of analysis. But it serves as a beginning, to suggest what kind of elements can be isolated and arranged in varied patterns, which ones can be combined within a single morpheme (with what effect), what would result from expressing some of them in grammatical forms and others in ordinary words, and so on. We thus obtain both a picture of how meanings are expressed in languages, and a suggestion of how other ways can be constructed.

Communication and expression. Having surveyed the relation of talking to other behavior, and the meaning of talk, we turn now to the place that talking occupies in the life of a person—what might be called the function of speech.

Sapir points out that talking fills various functions beside communication. There is first the direct expressive effect to oneself of talking and of the way one talks. To this Sapir adds the symbol of social solidarity that is expressed by having speech forms in common—in the nicknames of a family, in professional cant, in all sorts of small and large common-interest groups: 'No one is entitled to say "trig" or "math" who has not gone through such familiar and painful experiences as a high school or undergraduate student ... A self-made mathematician has hardly the right to use the word "math" in referring to his own interests because the student overtones of the word do not properly apply to him' (16). Finally, because of the dissociated character of language, there is 'the im-

[21] As is well known, logic and especially semantics are also based in part upon the language of their practitioners, and are limited by their linguistic experience. However, this linguistic basis is not explicit because usually unacknowledged; narrow because usually limited to European languages; and arbitrary because not subject to explicit empirical and analytic techniques or to controls.

portant role which language plays as a substitute means of expression for those individuals who have a greater than normal difficulty in adjusting to the environment in terms of primary action patterns' (18). Such functions of language, though episodically mentioned by linguists, merit further study, even though these functions are often filled more adequately by other behavior—gesture, symbol, art, and the like. As a method of communicating, however, no other behavior compares with language. Writing originated as an independent method of communicating, but Sapir points out that 'true progress in the art of writing lay in the virtual abandonment of the principle with which it originally started' (13): the pictorial and direct symbolization of experience was replaced by symbolization of words; and we may add that in most systems the direct symbolization of words was replaced by signs for the sounds of speech.

Of non-verbal communication, such as railroad lights or wigwagging, he adds that 'while they are late in developing in the history of society, they are very much less complex in structure than language itself' (107). This statement holds only in certain senses. It is true that each field of mathematics, and all of them together, can deal with but a small range of subjects. And the symbols and statements (equations) and sequences of statements of mathematics may each, taken individually, be less complex than those of language. But the possibility of including the results (output) of one relational statement into the terms of another, by means of successive definitions, makes it possible for mathematical statements to carry a far greater communication load than linguistic statements on the same subjects: compare any mathematical formula but the most trivial with its translation into English. Furthermore, developments in electrical circuit systems, in electronic control instruments, and in electronic computers open the possibility of highly complicated activities equivalent to communication. The ultimate communicational operation in these instruments is simpler than in mathematics (and much simpler than the countless experiential associations of language), since it is generally reducible to *yes–no* (closing or opening a circuit) or to a distribution of a given current as among several branches in the circuit (depending on the resistance of each branch). Nevertheless, the innumerable possible lay-outs of paths, and the rapid and numerous occurrences of the basic operation, may enable these instruments to carry more complex communication than language can, within a limited range of subject-matter.

Sapir notes, indeed, that non-verbal communication may be more useful even when it is not more complex (or because it can be more simple); namely 'where it is desired to encourage the automatic nature of the response. Because language is extraordinarily rich in meaning, it sometimes becomes a little annoying or even dangerous to rely upon it where only a simple this or that, or yes or no, is expected to be the response' (107).

Behind the discussion of language as a method of communication lies the less important but still relevant question of just how much of language-like communication is language proper. This is largely the question of the intonations and gestures which occur with speech. Sapir says: 'The consistent message delivered by language symbolism in the narrow sense may flatly contradict the message communicated by the synchronous system of gestures, consisting of

movements of the hands and head, intonations of the voice, and breathing symbolisms. The former system may be entirely conscious, the latter entirely unconscious. Linguistic, as opposed to gesture, communication tends to be the official and socially accredited one' (105).

While all this is quite true, a few cautions may be in place. Some of the intonations may be reducible to patterned sequences of a few contrasting tones (tone phonemes), and may thus be considered morphemes no less than the ordinary morphemes with which they occur: in English this may be true of the assertion or command intonations, but not of the ones for excitement or for irony.

This means that the question of which intonations are part of language and which are gestural sounds is simply the question of which of them can be described like the other elements of language—as combinations and sequences of phonemic elements (in this case phonemic tones). In turn, this means that at least some of the distinction between gesture and language is a matter of the linguist's methods of analysis. This is not to say that the distinction is not important. The fact that ordinary morphemes and some intonations can be described as fixed combinations of fixed phonemic elements, while other intonations and all gestures cannot be so described, reflects a difference in the explicitness and type of use of these two groups of communicational (and expressive) activities.

For the linguist, one group is language, the other is not. For the hearer and the speaker the difference may be one of degree, with decreasing awareness and explicitness as we go from morpheme to morpheme-like intonations to other intonations and gestures. But there is still considerable awareness of gesture and intonation, which most people can understand with nicety. And there is often great unawareness of the 'accredited' linguistic communication and expression, as when a person reveals his attitudes or wishes by what we call his 'natural choice of words' (with or without the hearer's understanding of what lies behind this choice).

The decision of what to include in the linguistic structure rests with the linguist, who has to work out that structure, and is simply a matter of what can be fitted into a structure of the linguistic type. The question of what activities constitute what kind of communication is largely an independent one, and is answered by observing the kind of use people make of the various communicational and expressive activities.

Constructed language. So far the description and analysis. It is fine to do this for its own sake. It is fine to obtain from this work generalizations and predictions about language, or interconnections with more general problems about the patterning of behavior. However, the linguist who has all these results in his hands is also able to construct something with it, to synthesize something by means of his knowledge. He can carry out critiques of people's language and communication activities, showing what is being effected by them, or how they fall short by one standard or another. He can use his particular analytic experience in devising combinatorial techniques, not only of linguistic material. He can try to construct a communication system (and perhaps a representation system) more efficient and free than existing languages.

This last is always an attractive task to any linguist who is interested in the productive potentialities of his work. It is little wonder that Jespersen and Sapir, two linguists who were avidly interested in life and in their work, were each concerned with the construction of a superior language.

The most obvious source of interest lay in the need for international communication. Because Sapir's anthropological horizons were naturally wider than Jespersen's, the problem was more complicated for him because 'international' meant for him more than just the western world: 'As the Oriental peoples become of more and more importance in the modern world, the air of sanctity that attaches to English or German or French is likely to seem less and less a thing to be taken for granted, and it is not at all unlikely that the triumph of the international language movement will owe much to the Chinaman's and the Indian's indifference to the vested interests of Europe' (119). Furthermore, an international language meant more than a pidgin auxiliary: 'It is perfectly true that for untold generations to come an international language must be auxiliary, must not attempt to set itself up against the many languages of the folk, but it must for all that be a free powerful expression of its own, capable of all work that may reasonably be expected of language' (113). Special audiences for it already exist, as in the 'social unity' of the scattered scientific world (108); but Sapir recognized the social blocks: 'Any consciously constructed international language has to deal with the great difficulty of not being felt to represent a distinctive people or culture. Hence the learning of it is of very little symbolic significance for the average person' (31). Under possible future political circumstances, however, such a language might conversely be 'protected by the powerful negative fact that it cannot be interpreted as the symbol of any localism or nationality' (113). And Sapir's comment quoted above about the possible effect of the Asiatics on the establishment of an international language is an example of the kind of social need which alone would bring such a language into currency.

The need for a language of international communication arises not only from the fact that communication without it may be impossible (where people do not know each other's language), but also from the fact that it may be inefficient (where one depends on translation, interpreters, or one's limited knowledge of a foreign tongue). We are here dealing with the question of information loss in translation. On this subject Sapir says: 'To pass from one language to another is psychologically parallel to passing from one geometrical system of reference to another. The environing world which is referred to is the same for either language; the world of points is the same in either frame of reference. But the formal method of approach to the expressed item of experience, as to the given point of space, is so different that the resulting feeling of orientation can be the same neither in the two languages nor in the two frames of reference' (153).

There is however a difference between the two cases. One might claim that what is said in one geometric frame (or language) is different from what is said in another, or that the relation of the given information to its universe (or to other bits of information) is different in one from its translation in the other. Still, any identification of a point or relation in, say, Cartesian coordinates can be given completely in, say, polar coordinates, and conversely (though the 'trans-

lation' may be more complicated than the original statement). This does not in general hold for language translation. Except for relatively simple parts of the physical world (like the smaller numbers), or very explicitly described parts of it (like the set-up of a scientific experiment), we cannot get a description of the physical world except as variously perceived by the speakers of one language or another.[22] It is therefore not in general possible to see how two language systems depart from their common physical world, but only how they depart from each other. The question of translation is the question of correcting for the difference between the two systems. But neither system can be referred to an absolute physical system (as is possible in the case of scientific terminology), nor is there at present any general method for establishing equivalence relations among them (as can be done among geometric frames of reference). Therefore it does not seem possible to establish a general method for determining the information loss in translating from one language to another, as Wiener would do on the basis of his measure of 'amount of information'.[23]

These two types of difficulty in international communication may have been the major stimulus to the many attempts at forming auxiliary languages. To Sapir, however, as to some linguists and logicians, there was also the incentive of fashioning a superior language system. He was well aware of the limitations of our language, which both narrows our perception and prevents us from expressing adequately some of the things we have perceived: 'As our scientific experience grows we must learn to fight the implications of language ... No matter how sophisticated our modes of interpretation become, we never really get beyond the projection and continuous transfer of relations suggested by the forms of our speech. After all, to say "Friction causes such and such a result" is not very different from saying "The grass waves in the wind" ' (10–1). He was also able to show that linguistic systems are much less satisfactory than might appear: 'The fact that a beginner in English has not many paradigms to learn gives him a feeling of absence of difficulty ... [but] behind a superficial appearance of simplicity there is concealed a perfect hornet's nest of bizarre and arbitrary usages ... We can "give a person a shove" or "a push", but we cannot "give him a move" ... We can "give one help", but we "give obedience", not "obey" ... "To put out of danger" is formally analogous to "to put out of school",

[22] See E. Sapir and M. Swadesh, American Indian grammatical categories, Word 2.103–12 (1946)—an item not included in the bibliography. On p. 111 Swadesh quotes a perfectly valid note of Sapir's: 'Naiveté of imagining that any analysis of experience is dependent on pattern expressed in language. Lack of case or other category no indication of lack functionally ... In any given context involving use of language, lang. response is not to be split up into its elements grammatically nor sensorimotorly but kept as unit in contextual pattern.' Elsewhere, however, Sapir says: 'The "real world" is to a large extent unconsciously built up on the language habits of the group ... The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached' (162). There is no contradiction here, since the 'environing world' is the physical world, whereas the 'real world', in quotes, is also called 'social reality' (162) and constitutes the physical world as socially perceived: 'Even the simplest environmental influence is either supported or transformed by social forces' (89); 'The physical environment is reflected in language only insofar as it has been influenced by social forces' (90).

[23] Norbert Wiener, Cybernetics, Chap. 3, esp. 75–9.

but here too the analogy is utterly misleading, unless, indeed, one defines school as a form of danger' (114–5).

Because of his sensitivity to these limitations, Sapir had in mind 'an engine of expression which is logically defensible at every point and which tends to correspond to the rigorous spirit of modern science' (112). He pointed out that the inadequacies of language systems have led to the development of separate systems of symbolism in mathematics and symbolic logic (118). The problem was therefore one of constructing a language system which by its structure would avoid ambiguities and inefficiencies, would be a conformable vehicle for our present scientific understandings, and would be able to change with growth of our understanding. However, there may well be a distinction between the construction of an international language for flexible use in ordinary life, and that of a scientific language which would not only express in its structure the various types of relations, of operations and operands, known to science, but would also have the truth-value retention of a logical system.[24]

The program called for a language that would be easy to learn for people coming with the background of the existing languages, and that would be as simple as possible in its structure, while selecting the kind of structure that would fit the scientific understanding of the world. Because these were his interests, Sapir did not try to construct a language, like Jespersen's Novial, but tried rather to find out what should go into the construction of such a language. Even his investigation of phonetic symbolism is relevant here, as showing what meanings might be less arbitrarily expressed by particular sounds. The investigations which he made specifically for the International Auxiliary Language Association were the semantic papers mentioned above, which would show how useful or harmful it was to have certain meanings expressed together within a morpheme, and what component factors of meaning could be extracted from given words by seeing how they are used. The questions of what meanings could be conveniently expressed by what kinds of structural elements, and of what patternings and formal structures were possible, were not touched by Sapir.

<4.> Change in language. Sapir's tendency toward analysis in depth, which he could express within descriptive linguistics by means of the process type of formulation, led also to the historical investigation of patterned features. In the process formulation, time was not involved, and depth was a matter of various analytic layers of the system. We now consider investigations in which depth was a matter of historical time, of various successive forms of the system through time.

A descriptive pattern can of course be viewed as being just an interesting arrangement of the data. However, since Sapir saw it as the result of various distributional processes (such as protective mechanisms) among the elements,

[24] For an example of how particular logical relations can be built into a constructed language, consider the 'newspeak' of George Orwell's novel Nineteen eighty-four. One of the distributional features which is only lightly suggested in his system is the technique (not unknown in our real languages) of letting opposites equal or replace each other in certain environments, with the result that no distinction between opposites (say between *war* and *peace*) can be made in the language.

he could readily see it also as the result of various historical processes affecting the elements. An instance is the historical addition of a glottal stop between morpheme-final vowel and morpheme-initial vowel in the example cited earlier: in terms of descriptive process, the ʔ in -V + V- was based on a descriptively prior absence of -VV-; in terms of history the ʔ in -V + V- may actually have been a late development, due analogically to the absence of -VV-.

A detailed example of this is the discussion of glottalized continuants in certain west-coast languages. After making it clear that all or most of the types *ẏ*, *ẇ*, *ṁ*, and *ṅ* are distinct phonemes in the languages under consideration, Sapir points out that they are 'so singular that it is tempting to seek evidence accounting for their origin' (226–7). Their singularity is partly distributional (in Navaho, these alone of all consonants do not occur as word-initial), partly morphophonemic (in Navaho, these occur in morphemic environments which can be otherwise shown to have once contained a *d* morpheme, 228–9). For Wakashan (Nootka and Kwakiutl), he shows that these consonants go back to coalescences of ʔ or *h* with neighboring continuants (244); the argument is far too involved and detailed to be summarized here (230–44). In the course of his analysis, Sapir shows that additional glottalized continuants probably existed once in Wakashan (231), and that Boas' 'hardening' process is not the opposite of his 'softening' but is simply a glottalized softening (233). The whole reconstruction, based on comparative evidence, is then used to suggest that when phonetically 'weak' consonants drop they may leave influences in neighboring phonemes, i.e. that they are absorbed rather than dropped (244). With this background, Sapir than reconstructs Indo-European laryngeal bases out of various sets of irregular cognates (245–50), by explaining the various consonantal irregularities as regular reflexes of the effect of lost laryngeals (i.e. of their absorption).

The same methods of investigation are apparent in the famous series of articles on word cognates and word borrowings in Indo-European, Semitic, and other Mediterranean languages, which began to appear in 1934. Two of these are reprinted here (285–8, 294–302); all are of course listed in the bibliography. Studies of loanwords were prominent in this series, because they made it possible to consider the effect of each language system on the form of the word, and to explain otherwise unexplained forms. These papers, together with that on glottalized continuants, are masterpieces of brilliant association, bringing together all sorts of apparently unrelated data, and of meticulous responsibility to every possibly relevant consideration or counter-argument. To discuss what Sapir does in them would take as much space as the original articles; only a careful reading can reveal their remarkable craftsmanship. Some aspects of the method of work used in them, however, will be discussed in Part 4 below.

Much of this brilliance and craftsmanship went into Sapir's painstaking work on Tocharian, which was one of his main projects during those years, and most of which is as yet unpublished.

In addition to all this work, which was of a unique character and bore the stamp of his personality, Sapir also carried out standard work in comparative linguistics, as for example in the Encyclopaedia Britannica article on Philology,

or in The concept of phonetic law as tested in primitive languages by Leonard Bloomfield (73–82), in which he presented Bloomfield's Algonkian reconstructions and his own Athabascan ones.

Sapir being what he was, he not only carried out historical linguistic investigations but also made historical linguistic interpretations. In his book Language (Chapter 7), he suggested that similarities among genetically related languages which were too late for their common ancestry, but which could not easily be explained as diffusion, might be explained by a 'drift' which occurs in each of these languages independently of the other but along parallel lines of development. This view has been generally questioned and disregarded by linguists, although data that may support it are not lacking.[25] Sapir granted that such drift could be explained only on the basis of what he sometimes called 'configurational pressure' in the structure with which each of the sister languages started. That is to say, the parent structure may have contained certain imbalances or irregularities, or may otherwise have favored the occurrence of certain changes rather than others; and as this structure developed in various separate places (in what became the various daughter languages) it underwent some of these structurally favored changes in several places independently of each other. Elsewhere, Sapir uses the concept of drift, i.e. of structural favoring as a source of change, to explain the bulk of changes—differentiating ones as well as parallel ones (23). Little, however, can be done with this concept until we can say what kind of structure favors what kind of change in it, i.e. until we can specify 'configurational pressure' and then test to see if it operates.

In addition to this tentative suggestion about the direction of linguistic change, Sapir commented on the even more general problem of the rate of change. There have been various conditional suggestions, as for example that languages with tightly knit structures (e.g. Semitic) change more slowly than those with looser structures (e.g., in comparison, Indo-European). To this Sapir added the general statement that all languages change much more slowly than culture (26–7) and at a more even rate (433),[26] although he thought that changes in both rates might be interconnected: 'The rapid development of culture in western Europe during the last 2000 years has been synchronous with what seems to be unusually rapid changes in language' (102). He then used this statement for a possible explanation of why there is no structural correlation between the patterning of language and the patterning of culture: even if there was once a 'more definite association between cultural and linguistic form, 'the different character and rate of change in linguistic cultural phenomena ... would in the long run very materially disturb and ultimately entirely eliminate such an association' (101, also 26 and 102).[ ]

[25] Cf. Zellig S. Harris, Development of the Canaanite dialects 99–100 (New Haven, 1939)

[26] An echo of this appears in the work of Sapir's student Morris Swadesh on rate of vocabulary change. Cf. in particular his Salish investigations, carried out under the auspices of the Boas Collection in the American Philosophical Society Library, and published in Salish internal relationships, IJAL 16.157–67 (1950).

Editorial Note

First published, as a review of *Edward Sapir: Selected Writings in Language, Culture and Personality* (ed. D.G. Mandelbaum, 1949) in *Language* 27 (1951), 288–333. Of the three sections, "Language", "Culture", and "Personality" (followed by a "Conclusion"), only the first is reprinted here.

Editorial interventions: passages deleted within a sentence are indicated with [...]; passages deleted between sentences with [...]; all editorial additions or changes are put between < >.

Introduction to Stanley Newman's text

Stanley Newman (1905–1984)[1] was one of Sapir's most gifted and brilliant students, whose interests covered the fields of linguistics, anthropology, and psychology, domains to which he made significant contributions, as Sapir did also.

Whereas Zellig Harris's review of the *Selected Writings* of Edward Sapir —of which extracts are reproduced here— offers, so to speak, an "analytical arrangement" of Sapir's working methods and procedures, Newman's review —reproduced here with deletions of those passages that directly relate to the occasion of making Sapir's writings available in the 1949 selection — provides us with a "process" view of Sapir's interests and scholarly career, and also of his academic prose. Newman pays particular attention to the scientific (and literary) genres which Edward Sapir practiced, and to his expert handling of various styles.

Newman's appreciation of Sapir's book *Language* (1921) appears to be rather unenthusiastic —and one could easily question his statement that Sapir "later abandoned [...] many of the problems discussed in its pages" — but there is much praise for Sapir's opening up of linguistics to the study of modes of behaviour, in language as well as in adjoining fields, and of his extension of the study of linguistic patterns to the total range of social patterns of form.[2]

Newman's review was written against the background of the evolutionary tensions in American linguistics during the late 40s and early 50s, marked by the refinement of linguistic techniques and a restrictive practice of linguistics as a descriptive (or descriptivist) doctrine. It is not so much with the unfortunate overemphasizing of methods opposite to those of Sapir and his students that Newman has a problem, but rather with the trend towards a narrowed perspective and towards the reductionist practice of linguistics as "microlinguistics," a

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[1] For an obituary of Stanley Newman, see *Language* 63 (1987), 346–390 (obituary and selective bibliography by Michael Silverstein). For a full bibliography, the edition of a number of unpublished biographical texts of Stanley Newman, an inventory of his linguistic materials by Mary Ritchie Key, an appraisal by Michael Silverstein, an obituary by Philip Bock and Harry Basehart, a historiographical study of Newman's place within the "Sapir school of linguistics" by Regna Darnell, and various articles in honour of Stanley Newman, see the volume *General and Amerindian Ethnolinguistics. In Remembrance of Stanley Newman*, edited by Mary Ritchie Key and Henry M. Hoenigswald (Berlin/New York, 1989) [see my review in *Orbis* 35 (1992), 145–146].

[2] The full text of the reviews by Harris and Newman has been reprinted in Konrad Koerner (ed.), *Edward Sapir. Appraisals of his Life and Work* (Amsterdam/Philadelphia, 1984), pp. 59–65 (Newman's review) and pp. 66–114 (Harris's review).

[3] See Newman's posthumous article "The Development of Sapir's Psychology of Human Behaviour", in *New Perspectives in Language, Culture, and Personality*, edited by William Cowan, Michael K. Foster, and Konrad Koerner (Amsterdam/Philadelphia, 1986), 405–427 (and discussion pp. 427–431). In the article Newman offers a more positive appraisal of Sapir's *Language* (see pp. 411–412).

term which Newman borrows from George L. Trager.[4] To this (neo-)Bloomfieldian linguistics —of which he recognizes the methodological rigour, as well as the practical necessity—, Newman opposes Sapir's "cosmopolitan" linguistics, of which he perceives signs of revival (Newman was probably alluding here to work in anthropological linguistics and to anticipatory efforts in what came to be called "sociolinguistics," especially in the study of bilingualism and multilingualism). It is in the light of Newman's intuition of evolutionary trends in American linguistics that we should read the conclusion of his text, where he draws an admittedly oversimplified contrast between the "centripetal" Bloomfield and the "centrifugal" Sapir.

Pierre SWIGGERS

[4] See George L. Trager, *The Field of Linguistics* (= Studies in Linguistics: Occasional Papers, 1; Buffalo, 1949).

Stanley NEWMAN

<Edward Sapir's work and style>*

[180] [...] <I>n spite of Sapir's short life, his monographs, articles and reviews flowed in a voluminous and steady stream over a productive period of nearly thirty-five years. His writings encompassed a wide range of topics in several distinct disciplines. And the quality of his writing was maintained at a level of originality and richness that was as steady as its volume. Sapir did not seem to experience the ups and downs of inventiveness that normally plague a writer. Even in a brief review, where he would ostensibly be discussing a specific book, his fresh insights illuminated a circle of new problems with unsuspected significance. [...] <In> [...] Sapir's papers in the field of American Indian languages [...] <t>he historical evidence is emphasized [...] <, as> in "Internal Linguistic Evidence Suggestive of the Northern Origin of the Navaho," [...] illustrat<ing> how comparative linguistic **[181]** data can be utilized to reconstruct the history of group migrations. <His two> papers "Abnormal Types of Speech in Nootka" and "Male and Female Forms of Speech in Yana," deal with linguistic devices characterizing certain socially defined groups in these two cultures. The Nootka article takes up the problem of the historical development of these abnormal types of speech, which resemble speech defects but function as mocking forms or as styles of speech identifying certain folktale characters. The possible similarities in the phonological development of glottalized continuants in several unrelated languages are examined in "Glottalized Continuants in Navaho, Nootka, and Kwakiutl (with a note on Indo-European)." The "note" of some half-dozen pages is a succinct presentation of Sapir's views on the Indo-European laryngeal hypothesis. [...]

The first ten years <of Sapir's scholarly career>, from 1906 through 1915, were primarily devoted to descriptive studies in American Indian languages. During this time he published texts, vocabularies, descriptive sketches or fragments on Kwakiutl, Chinook, Yana, Wishram, Wasco, Takelma, Ute, Paiute, Nootka, Tutelo, Chasta Costa, Comox. Toward the end of this period another aspect of American Indian linguistics was brought into focus. Sapir's background of training in Semitic and in Indo-European comparative linguistics <was> now applied to American Indian languages. In 1913 he published the first of his papers on "Southern Paiute and Nahuatl, a Study in Uto-Aztecan." [...] This substantial study of nearly a hundred pages represents, as far as I know, the first application to American Indian languages of the comparative method based upon the analysis of systematic phonetic correspondences and directed toward the reconstruction of the sound system in a parent language. [...] It is a revealing commentary on Sapir's character that when he wrote an article, nearly twenty years later, demonstrating the application of the comparative approach to American Indian languages, he entitled it "The Concept of Phonetic Law as Tested in Primitive Languages by Leonard Bloomfield."

The period of 1916 through 1925, which covered the last ten years of his fifteen-year stay in Ottawa, brought significant new currents into the broadening

stream of his interests. He continued, though less intensively, to publish descriptive studies in American Indian languages. The full-length grammar of Takelma appeared in this period, based upon data collected some ten years earlier. His detailed and meticulous description of Southern Paiute, not published until 1930, was completed in 1917. He also wrote descriptive articles on Nootka, Yana, Kutenai, Chimariko, Haida, Sarcee. Comparative linguistics drew more of his attention than it had previously, but his interest turned increasingly toward structural comparisons rather than phonological analyses. He kept on publishing comparative studies in Athabascan and Algonkin, and it was during these years that he wrote all of his articles on the Hokan problem and his one paper on Penutian.

Sapir's contributions to American Indian linguistics should correct the impression that he was a writer who produced only one book, *Language*, with the remainder of his work appearing in the form of brief articles. It is true that he had a special flair for condensing a problem or a point of view in the ten-to-twenty-page article which is the favored literary form of scholarly journals. But he did not by any means confine himself to this form. He also wrote many longer articles, and he produced about a dozen monograph-length or book-length grammars, text collections, and **[182]** comparative studies in American Indian languages.

But, in addition to his linguistic work in the American Indian field, Sapir's writings during this period reveal the new trend that was to become the absorbing interest of his life. He began to venture beyond the strict confines of linguistics and to seek new perspectives for the phenomena of language that would relate it to other forms of human behavior. About half of his monograph of 1916, *Time Perspective in Aboriginal American Culture: A Study in Method*, discusses the types of linguistic evidence which can be utilized for reconstructing culture history. His book *Language*, published in 1921, contains sections and chapters which show the same tendency to explore wider problems. But the book should be regarded as merely an evidence of his early attempts in this direction, for he later abandoned or completely restated many of the problems discussed in its pages, such as the relation between language and thought, or the characteristics of language as a form of art —an idea in which he was apparently stimulated at the time through his reading of Croce.

In 1925 he wrote his first article on an international auxiliary language. The same year saw the publication of "Sound Patterns in Language," the first article, I believe, in which he used the term "phoneme." To Sapir the phoneme concept was significant, not so much as a methodological tool for the linguist, but rather as a powerful and clear demonstration of the unconscious patterning of human behavior. Essentially, he attempted to show in this article that speech sounds cannot be fruitfully understood as a mere set of articulatory motor habits: two languages "may have identical sounds but utterly distinct phonetic patterns; or they may have mutually incompatible phonetic systems, from the articulatory and acoustic standpoint, but identical or similar patterns."

One can gain some notion of the new sources of stimulation and vitality that entered Sapir's work during the 1916–1925 period by examining his writings outside of linguistics. Ethnological papers continued to appear as before. But in 1917 he published reviews of Freud's *Delusion and Dream* and of Oskar Pfister's *The*

Psychoanalytic Method. These were the first indications in his writings of an interest that was to continue throughout his life. Articles and reviews on music and literature also began to appear during these years. And in 1917 he began to publish poetry, whose volume and whose significance to his thinking should not be overlooked. He published one book of verse and <hundreds of> poems [...] in many literary journals of Canada and the United States. These were no amateurish effusions which he tossed off now and then in his lighter moments. In fact, it might be said of Sapir that he could not approach any task in the true spirit of an amateur or a dilettante. He worked at poetry with the same unrelaxing energy and incisiveness of mind that characterized his efforts in linguistics or ethnology.

His experience with poetry had a distinctive influence upon his prose style. Sapir was always a competent writer of expository prose. Even his earliest papers show that he never lacked the ability to write the clear, precise, well-organized, though somewhat colorless prose characteristic of the better academic writings. But his prose from about 1920 began to take on new dimensions. One can notice a growth in the apparently effortless and graceful fluency of his expression. Certain verbal habits peculiar to poetry invaded his prose. Even passages pulled out of context from his later writings are eminently quotable, for he became skillful in the use of the packed phrase, the vibrant word, the familiar image reset in an unfamiliar context to evoke fresh and unsuspected implications of a theme.

His writing continued to be clear and **[183]** ordered in its conceptual exposition, but he emphasized more and more the control of evocative overtones in any topic he discussed. He set out to capture, not only the intellects of his readers, but their feelings and attitudes as well, and anyone who knew Sapir can have little doubt that he did this with utter frankness and a full consciousness of what he was doing. Instead of continuing to master the one style of conventional academic writing, he became adept at handling many styles. He preferred to play a variety of stylistic tunes in one and the same article, shifting imperceptibly from a sober argument, to an imaginative play with words and concepts, to an interlude of wit and humor —and Sapir became increasingly fond of indulging in passages of academic leg-pulling— back to the sober line of argument again. It is this breadth and variety in his control over language which gives his writing its color and refreshing vitality.

The implications of Sapir's holistic use of language [...] were realized more fully in his publications after he returned to the United States in 1925. He practically stopped writing descriptive and comparative studies in American Indian languages. Most of the few American Indian papers which appeared were apparently based upon previously collected materials and merely edited for publication during this period. He became more interested in utilizing this data to illustrate socially and psychologically significant modes of behavior in language [...] Throughout many articles he drew upon his American Indian linguistic data for examples to pinpoint a broader theme. This technique — the presentation of concrete examples, followed by an explanation of their meaning and significance in a more inclusive frame of reference— became a favorite mode of exposition with Sapir.

This period saw a revival of his earlier interest in historical and comparative studies of the Indo-European and Semitic languages. The Hittite problem stimu-

lated him to examine Hittite-Indo-European relationships and to publish several papers on his results. In one article he traced certain influences of Tibetan on Tocharian, which he believed to be a "Tibetanized Indo-European idiom." He had additional data on the Tocharian-Tibetan problem, and early in his career he had collected Sinitic materials in exploring Sinitic-Nadene relationships. [...]

He also continued publishing articles on the problems of an international constructed language. And it was during this period that he wrote his three papers in the field of semantics —*Totality, The Expression of the Ending-Point Relation in English, French, and German*, and "Grading, A Study in Semantics."

The bulk of his articles after 1925, however, reflected his primary interest in pushing language study beyond the conventional boundaries of linguistics. Some of his general articles during these years —"Philology" (1926), "Communication" (1931), "Dialect" (1931), "Language" (1933), "Symbolism" (1934)— outlined the multiple facets of linguistic phenomena as they impinge on problems of individual and group behavior. This point of view was presented in a programmatic manner in "The Status of Linguistics as a Science" (1929), whose purpose, in spite of its title, was "not to insist on what linguistics has already accomplished, but rather to point out some of the connections between linguistics and **[184]** other scientific disciplines." In this paper he stressed the strategic importance of linguistics for the methodology of social science. [...]

The content of language was, to Sapir, significant as "a symbolic guide to culture." "We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation." The individual's behavior in language was also important as symptomatic of his personality, and this theme he discussed in detail in "Speech as a Personality Trait" (1926). But it was the evidence of form in language which impressed Sapir as having the deepest implications for an understanding of human behavior. Linguistic form was a patterned phenomenon; in the individual or the group these formal configurations were adhered to or recreated unconsciously and intuitively. Sapir unceasingly hammered at this theme in his articles, whether written for linguists, psychologists, or social scientists. In "The Unconscious Patterning of Behavior in Society" (1927) [...] Sapir used linguistic data as his prize exhibit, but he also attempted to show that unconscious patterning was characteristic of non-linguistic forms of behavior as well. He translated this concept into psychoanalytic terms, [...] when he wrote in an earlier book review of the need for discovering a social psychology of "form-libido." In short, language provided the clearest and most easily described evidence of the fundamental human tendency to mold behavior into unconscious patterns of form. [...]

<I>t is somewhat arbitrary to divide Sapir's writings into the categories of [...] Language, [...] Culture, and [...] The Interplay of Culture and Personality. [...] <T>o Sapir these were not separate fields, and his writings, particularly during the last 15 or 20 years of his life, explain and reiterate his reasons for considering them as an indissolubly fused whole. [...] <His> *Time Perspective* paper <for instance> [...] gives a concentrated presentation of the methods for using linguistic evidence to work out time perspectives. This paper should be required reading for students in linguistics, as it is for most students of ethnology. Similarly, [...] such papers as "Speech as a Personality Trait," "Symbolism,"

and "The Unconscious Patterning of Behavior in [185] Society" <are important for> the linguist.

At the time that Sapir was seeking to expand the horizons of language study beyond the linguist's traditional universe of discourse, history played a cruel trick on him by directing linguistics into contrary channels. Under the influence of Bloomfield, American linguists in the 1930s turned to an intensive cultivation of their own field, sharpening their methodological tools and rigorously defining the proper limits of their science in terms of what Trager has identified as "microlinguistics." They became increasingly efficient microlinguists. Certainly no one can deny that this involutionary trend has given linguistics a disciplined clarity and power of analysis that it never had before. But it is equally true that this trend carries with it the seeds of an ever-narrowing parochialism. And it was Sapir's main purpose to make linguistics a more cosmopolitan member of the community of sciences.

[...] Sapir was as thoroughly committed as Bloomfield to the view that a valid linguistic science must be a coherent and self-consistent body of concepts. It must not look for extra-linguistic formulations to support or, still worse, to validate its findings. [...]

Sapir's policy in seeking interdisciplinary linkages between linguistics and psychology was simply to present linguistic formulations and to allow psychologists, of whatever brand, to make their own reinterpretations. Many of his articles were addressed to psychoanalysts and psychiatrists, for he saw that the operations of the unconscious as manifested in language could provide data of particular interest to these specialties. In "The Status of Linguistics as a Science" he pointed out that the configurated character of language, which "develops its fundamental patterns with relatively the most complete detachment from other types of cultural patterning" should have a special value for Gestalt psychologists. He spoke to experimental psychologists in their own lingo in "A Study in Phonetic Symbolism," where he reported the results of his use of experimental techniques in studies of sound symbolisms.

In making this manifold approach to psychologists Sapir realized that, if linguistics is the body of formulations made by professional linguists, then psychology is the body of formulations made by psychologists. He did not try to select or construct a linguist's psychology, which, like a psychologist's version of linguistics, would be neither fish nor fowl, but a spurious body of doctrine irrelevant to both disciplines. [...]

Sapir's approach to this delicate interdisciplinary problem is especially important [...] because there are signs that a renewed effort in this direction is now being made.<[1]> Fruitful results can be achieved if interested linguists and specialists in the other sciences of human behavior are willing to respect and to try to understand **[186]** one another. This type of endeavor is, of course, fraught with misunderstandings and disillusionments. But it is the only way in which linguists

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[1] <Newman's statement, applying to the situation in the early 1950s, is (now again) valid, given the separation between models of grammar and models of cognition. In addition, the interdisciplinary field of neurolinguistics has expanded significantly since the mid-century.>

and other specialists can cooperate to find concrete problems in which both can contribute and to formulate concepts relevant to both fields. Because Sapir understood the necessity of this approach, his linguistic writings are particularly meaningful to non-linguists. [...] <I>t may turn out that Sapir's major contribution in the long run will be as the linguists' spokesman to psychologists and social scientists. Although Sapir used linguistic methods and procedures with consummate skill, he was an artist rather than a scientist in this regard. It was Bloomfield who formulated the methods of linguistic science into a clearly defined and tightly coherent body of doctrine.

Linguistics has been fortunate indeed in claiming two men of this stature of genius, who could provide such utterly different and complementary impulses to their field. The one might be considered the centripetal force in linguistics; the other's impulse was decidedly centrifugal. One pointed the way to a more intensive and logical analysis of linguistic phenomena; the other indicated the broader perspectives within which linguistic science could contribute to a richer understanding of human behavior.

Editorial Note

First published, as a review of the *Selected Writings* of Edward Sapir (ed. D.G. Mandelbaum, 1949), in *International Journal of American Linguistics* 17 (1951), 180–186.

Editorial interventions: passages deleted within a sentence are indicated with [...]; passages deleted between sentences with [...]; all editorial additions or changes are put between < >.

Section One

The Problem of the Origin of Language (1907)

Introduction to Sapir's "Herder's "Ursprung der Sprache"" (1907)

This essay is Sapir's first scholarly writing, though it was published at a later date than his note on the "Rival Chiefs" (1905)[1] and only in the same year as his first articles on the Takelma Indians. The text is the somewhat revised version of Sapir's master's thesis in Germanic Philology at Columbia University (1905);[3] it was published in the journal *Modern Philology*.[4]

Sapir's article on Herder is significant in at least two respects:

(a) As the elaboration of a rather marginal theme within Germanic philology, it reflects Sapir's interest in general linguistics[5] and in the philosophy of language;

(b) The topic chosen allowed Sapir to bring in part of his background in Biblical Hebrew studies (given the fact that Herder takes Hebrew to be a primitive language); see, e.g., the references to Hebrew אַף "nostril, anger," dual אפים "nostrils, nose, face" (p. 127), and the allusion to Hebrew רוּחַ "breath, life, wind, soul" (pp. 127, 129).[6]

In addition the topic provided Sapir with the opportunity to profit from the widening of his linguistic horizon which he owed to Franz Boas. Although Sapir does not offer specific examples from American Indian languages, he refers, in very general terms, to the "elaborate formal machinery, particularly in regard to the verb, of the Semitic and of many North American

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[1] "The Rival Chiefs, a Kwakiutl Story Recorded by George Hunt", in Boas *Anniversary Volume* (New York, 1906), pp. 108–136 [Reprinted in *The Collected Works of Edward Sapir*, vol. VI, pp. 525–551]

[2] See: "Religious Ideas of the Takelma Indians of Southwestern Oregon", *Journal of American Folk-Lore* 20 (1907), 33–49 [Reprinted in *The Collected Works of Edward Sapir*, vol. IV, pp. 297–313]; and "Notes on the Takelma Indians of Southwestern Oregon", *American Anthropologist* n.s. 9 (1907), 251–275 [Reprinted in *The Collected Works of Edward Sapir*, vol. IV, pp. 267–291].

[3] Sapir majored in Germanics; he received his master's degree in the spring of 1905. See Stephen O. Murray – Wayne Dynes, "Edward Sapir's Coursework in Linguistics and Anthropology", *Historiographia Linguistica* 13 (1986), 125–129.

[4] *Modern Philology* 5 (1907), 109–142.

[5] Note also the conclusion of the article, where Sapir speaks of the "*fundamental* properties of language" (p. 142).

[6] The link established between the meanings "holy" (Hebrew root קדשׁ) and "set apart" (p. 130) should be attributed to Herder.

[7] Contrary to what is stated by Regna Darnell, *Edward Sapir: Linguist, Anthropologist, Humanist* (Berkeley, 1990), p. 11 ("the inclusion of Eskimo and Indian examples which must be attributed to two years of study with Boas") and p. 12 ("Americanist examples supplement Herder's simile once to demonstrate the grammatical complexity of all languages").

Indian languages" (pp. 129–130), to the "complexity" of "the Eskimo verb" (p. 130), and to "startling cases of linguistic conservatism [...] found among certain primitive peoples, such as the Eskimos" (p. 134). However, no concrete examples are adduced, and we should also keep in mind that Herder himself had referred to American Indian languages. It may therefore be historically incorrect to claim a high amount of Boasian influence in Sapir's master's thesis. Neither does the fact that Sapir shows familiarity with the Humboldtian trend (Humboldt, Steinthal, Haym)[8] constitute conclusive evidence for strong Boasian influence: in any linguistic-philosophical analysis of Herder's 1772 text[9] and its reception, mention had, and still has to be made of the relationship of Herder's text to Humboldt's writings on the nature of language and the diversity of language structures, as well as to Heymann Steinthal's classic *Der Ursprung der Sprache* (first edition, 1851),[10] while Rudolf Haym's two-volume work (1880–84)[11] remains an indispensable source-book on Herder's life, his intellectual background, his literary and philosophical contacts, and on the writing-history and publication of Herder's texts.

Sapir's analysis of Herder's text[12] is basically a linguistic one, in that Sapir reflects, as a linguist, on the theses and (pseudo-)arguments of Herder. Sapir does not approach the text in its philosophical dimension, as this was done by Carl Siegel in a book which appeared in the same year as Sapir's

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[8] On the affinities between Sapir's linguistics and Humboldt's philosophy of language see Emanuel J. Drechsel, "Wilhelm von Humboldt and Edward Sapir: Analogies and Homologies in their Linguistic Thoughts", in William Shipley (ed.), *In Honor of Mary Haas: from the Haas Festival Conference on Native American Linguistics* (Berlin/New York, 1988), 225–264; Jon Erickson – Marion Gymnich – Ansgar Nünning, "Wilhelm von Humboldt, Edward Sapir, and the Constructivist Framework", *Historiographia Linguistica* 24 (1997), 285–306.

[9] Herder's *Abhandlung über den Ursprung der Sprache*, which won the 1770 contest of the Berlin Academy of Sciences, first appeared in print in 1772 (Berlin, published by C.F. Voss). It was reprinted in the two editions of Herder's collected works: *Sämmtliche Werke* (ed. by Johann von Müller; Karlsruhe, 1820–29) and *Herders sämmtliche Werke* (ed. by Bernhard Suphan; Berlin, 1877–1913). Sapir used both the original 1772 edition and the one in volume 5 of *Herders sämmtliche Werke* (see p. 111); his page references are always to the 1772 edition.

[10] Heymann Steinthal, *Der Ursprung der Sprache, in Zusammenhang mit den letzten Fragen alles Wissens. Eine Darstellung der Ansicht Wilhelm von Humboldts, verglichen mit denen Herders und Hamanns* (Berlin, 1851, second ed. 1858, third ed. 1877, fourth ed. 1888). Steinthal's work was written as a response to Friedrich Schelling's call (in 1850) to reopen the question addressed by Herder in his prize essay.

[11] Rudolf Haym, *Herder nach seinem Leben und seinen Werken dargestellt* (Berlin, 1880–84, 2 vols.).

[12] The literature on Herder and on his *Abhandlung über den Ursprung der Sprache* is extensive. The two main bibliographical instruments are: Gottfried Günther – Albina Volgina – Siegfried Seifert, *Herder-Bibliographie* (Berlin, 1978) [Sapir's master's thesis is listed there, p. 513, as nr. 3713], and Tino Markworth, *Johann Gottfried Herder. A Bibliographical Survey 1977–1987* (Hürth-Efferen, 1990). On the occasion of the 175th anniversary of Herder's death an international colloquium was held in Berlin, the proceedings of which constitute an important reference work: see H. Scheel (ed.), *Johann Gottfried Herder. Zum 175. Todestag am 18. Dezember 1978* (Berlin, 1978).

article.[13] In fact, the philosophical and aesthetic dimension of Herder's text has attracted much more attention than the properly linguistic content, as can been seen from the long list of "exegetical" articles on Herder's *Abhandlung*, starting with W.H. Jacobi (1773)[14] up to Albrecht and Matuszewski (1978),[15] Franck (1982–3)[16] and Gaier (1988).[17] Sapir's analysis offers an interesting approach to Herder's *Abhandlung* from a linguistic point of view.

Sapir's analysis testifies to his philological background: he offers a "close reading" of Herder's text, of which the *Redaktionsgeschichte* is first recounted, followed by a brief sketch of the intellectual context. The choice of Herder (and not Grimm, Humboldt, or Steinthal) as a landmark in the history of reflections and debates on the "origin of language" — an ever fascinating theme[18]— is made clear from the beginning: Herder, reacting against the views of Süssmilch,[19] wrote a "pathfinding work" (p. 112), precisely by introducing a turn in perspective. As a matter of fact, Herder paved the way for the modern view on the problem of the origin of language, in that he linked language with the specificity and the evolution of humankind. More specifically, the insistence on language as a (biological) faculty which has undergone a gradual evolution is taken by Sapir to be Herder's main contribution: Herder was responsible for shifting the issue from a conservative (be it orthodox, rationalist, or even materialist) setting to a modern (biologically informed) one. With hindsight, we could say that

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[13] See Carl Siegel, *Herder als Philosoph* (Stuttgart Berlin, 1907), pp. 37–43.

[14] Wilhelm Heinrich Jacobi, "Betrachtung über die von Herrn Herder in seiner Abhandlung vom Ursprung der Sprache vorgelegte genetische Erklärung der Thierischen Kunsttriebe und Kunsttriebe", *Der Teutsche Merkur* 1773, vol. 1, fasc. 2, pp. 99–121.

[15] Erhard Albrecht – Jozef Matuszewski, "Herder über den Ursprung und das Wesen der Sprache", *Deutsche Zeitschrift für Philosophie* 26 (1978), 1297–1300.

[16] Luanne Frank, "Herder's 'Essay on the Origin of Language': Forerunner of contemporary views on history, aesthetics, literary theory, philosophy", *Forum Linguisticum* 7 (1982-3), 15–26.

[17] Ulrich Gaier, *Herders Sprachphilosophie und Erkenntniskritik* (Stuttgart/Bad Cannstatt, 1988), esp. pp. 75–156.

[18] The topic of the origin(s) of language has given rise to a considerable literature. For a bibliographical survey (with several thousands of titles), see Gordon W. Hewes, *Language Origins: A Bibliography* (The Hague, 1975, 2 vols.). For a survey of theories on the origin of language, see the various contributions in Joachim Gessinger and Wolfert von Rahden (eds.), *Theorien vom Ursprung der Sprache* (Berlin/New York, 1989, 2 vols.). The best monographic treatment is still James H. Stam, *Inquiries into the Origin of Language. The fate of a question* (New York, 1976).

[19] Johann Peter Süssmilch, *Versuch eines Beweises, dass die erste Sprache ihren Ursprung nicht vom Menschen, sondern allein vom Schöpfer erhalten habe* (Berlin, 1766).

Herder paved the way for the interdisciplinary research[20] —profiting from insights provided by linguistics, biology,[21] anatomy, psychology, chemistry and semiotics— which characterizes present-day investigations on the origin of language.[22]

Having singled out Herder as a turning-point, Sapir sketches the intellectual background with respect to the problem of the origin of language. He deals with the three prevailing 18th-century doctrines (pp. 112–115), viz.

(i) The "divine origin" view, called the "orthodox" view, which was specifically held by Süssmilch, who was the target of Herder's criticisms against this "God's gift" view;[23]

(ii) The contract-theory, defended by Rousseau (*Discours sur l'origine et les fondements de l'inégalité parmi les hommes*, written in 1753; *Essai sur l'origine des langues, où il est parlé de la mélodie et de l'imitation musicale*, written between 1749 and 1760, and posthumously published in 1781), where language is viewed as resulting from a mutual agreement within society. Sapir refers to this theory as the "rationalist" view (a rather unfortunate designation for Rousseau's general stand);

(iii) The sensualist theory of the origin of language, associated with the work of l'abbé Condillac (*Essai sur l'origine des connoissances humaines*, 1746), which views language as originating in instinctive expressions, which are analyzed and systematized by the (developing) human mind.[24]

The shortcomings —circularity, insufficiency of empirical evidence, lack of historical perspective— of these doctrines were noticed by Herder; Sapir

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[20] The importance of interdisciplinary orientation is apparent from the various contributions contained in Jürgen Trabant (ed.), *Origins of Language* (Budapest, 1996), in which scientists from different fields approach the problem of language origins, and from the state-of-the-art discussion in Guy Jucquois, *Pourquoi les hommes parlent-ils ? L'origine du langage humain* (Brussels, 2000).

[21] On the importance of "allometric" studies in evolutionary biology see, e.g., Emmanuel Gilissen, "L'évolution du concept d'encéphalisation chez les vertébrés" and "L'encéphalisation chez les primates", in Guy Jucquois and Pierre Swiggers (eds.), *Le comparatisme devant le miroir* (Louvain-la-Neuve, 1991), pp. 85–100, 100–117.

[22] See, e.g., Glynn L. Isaac and Alexander Marshack, "Origins and Evolution of Language and Speech", *Annals of the New York Academy of Sciences* 280 (1976), 275–311.

[23] On Herder's criticisms of Süssmilch's views, see: James H. Stam, *o.c.* [note 18], pp. 115–116, 127–128, and Bruce Kieffer, "Herder's Treatment of Süssmilch's Theory of the Origin of Language in the 'Abhandlung über den Ursprung der Sprache'. A re-evaluation", *Germanic Review* 53 (1978), 96–105.

[24] Sapir also refers (p. 118) to the French scientist and philosopher Pierre-Louis-Moreau de Maupertuis [1698–1759], whose lectures at the Berlin Academy of Science constituted the starting-point of the discussions on the origin of language in the 1750s and later. For a study of Maupertuis's views on the origin of language (set out in two pamphlets, published in 1748 and 1756), see Pierre Swiggers, "Maupertuis sur l'origine du langage", *Studies on Voltaire and the Eighteenth Century* 215 (1982), 163–169.

puts them in proper (linguistic) perspective, and does not hesitate to qualify them as "ridiculous" or "infantile."

Herder's approach —which itself is critically evaluated by Sapir— is then analyzed in greater detail (pp. 115–136). Sapir starts from Herder's basic thesis: language did not originate in emotional cries (in fact, man being inferior in instinctive power to other animals, one could hardly explain the specificity of human language while advocating an instinctive origin of language), but it originated within the "larger sphere" in which humans live and operate. While being at birth the "most helpless" animal, man is characterized by his capacity of attention, his propensity towards diversity (and, at the same time, universality), and his higher symbolic power.[26] The mental disposition underlying this (capacity of) complex behaviour, is called *Besonnenheit* by Herder (Sapir translates the term as "reflection;" one could also propose "pondering"). Although this *Besonnenheit* is a divine gift, it develops within, and with, the human species as a historical phenomenon.

This *Besonnenheit* proceeds, in Herder's view, by singling out fragments of experience, i.e. (experienced) properties, primarily auditory impressions, these "sounding actions," emanating from an animated nature, are first echoed, and later systematized in the formation of grammatical categories. Sapir shows himself extremely skeptical with regard to the thesis of an "original singing-speech" and of the chronology of the various parts of speech (in fact, such hypothesized chronology was rather typical of 18th-century philosophy of language and grammatical theory); in Sapir's opinion, there was no differentiation in word-functions at an early stage. Sapir also raises an interesting "relativistic" issue: on what grounds can we claim that (linguistic) symbolization relates to a fragment of an experience (and on what basis can such a part be delimited), and not to the total experience itself.[27] This is a major philosophical as well as linguistic problem.[28] In part, Herder avoids this problem, by positing the centrality of hearing,[28] as being inter-

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[26] Cf. Sapir's terms: "erroneously" (p. 124), "with a grain of salt" (p. 124), "more speculative" (p. 124), "wildest and most improbable fancy" (p. 124), "antiquated and subjectively confused psychology" (p. 127). For Sapir's appreciation of Herder's style, see p. 137 of his article.

[27] On this topic, see Paul Salmon, "Herder's Essay on the Origin of Language and the Place of Man in the Animal Kingdom", *German Life and Letters* n.s. 22 (1968–69), 59–71.

[28] See, e.g., Wallace Chafe, "Language as Symbolization", *Language* 43 (1967), 57–91, and for the classic statement of the philosophical problem, see Willard V.O. Quine, *Word and Object* (Cambridge [Mass.], 1960).

[28] Herder gives six reasons for this centrality (cf. Sapir's article, pp. 126-127).

mediary between the other senses, and by postulating synaesthetic processes, which characterize sensation, apperception, and subsequent symbolization."

The interaction of the various senses, characterizing perception and symbolic expression, pervades —in Herder's view— the primitive and original languages;[30] in these, imbrications and mutual transitions between the various senses abound, and metaphor plays an important role. Again, Sapir —as a linguist (and "modern semasiologist", p. 128)[31]— expresses strong reservations: metaphor is not specifically typical of older language stages, and instead of explaining the history of the lexicon by metaphorical processes, it is better to admit "an indefinite number of gradual semantic transmutations" (p. 128; italics ours).

As noted by Sapir, Herder's account leaves little room for grammar at the original stages of a language, but —what is more problematical— it hardly can provide insight into the "growth" of grammar (or of a grammatical system), although the assumption of such a growth is a central hypothesis in Herder's account. To this, Sapir opposes the view of grammar as developing "from within."

Sapir then proceeds to a discussion of the second part of Herder's text. Whereas in the first part of his text, Herder had answered the question of the possibility of the human origin of language, in the second part he tackles the question of the path along which language has (or would have) developed. Here Sapir limits himself to mentioning the four natural laws which Herder had formulated in order to account for the development of language:

(a) language undergoes growth in the individual;
(b) language undergoes growth in the family (or: in the cultural stock);
(c) language gradually develops into several dialects (giving rise, in a further stage, to language groups);[32]
(d) the growth of language is continuous throughout the human race and throughout human culture.

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[29] Sapir does not go into a discussion of Herder's epistemology; for a penetrating study, see Marian Heinz, *Sensualistischer Idealismus: Untersuchungen zur Erkenntnistheorie des jungen Herder* (1763–1778) (Hamburg, 1994); cf. also U. Gaier, *o.c.* [note 17], pp. 61–63, 81–82, 167–168, 191–194.

[30] Herder presents five criteria allowing to characterize and identify "original languages;" see Sapir's discussion, pp. 127–130.

[31] The term *semasiology* was frequently used in the late 19th and early 20th century, especially by Germanic and Romance philologists, with reference to research in (historical) semantics.

[32] According to Sapir, this is the most interesting of the four natural laws. On the issue of dialectalization, see also Sapir's *Language* (New York, 1921), pp. 159–164, 184–193.

With the fourth law, Herder —in spite of personal hesitation— adheres to the thesis of linguistic monogenesis (based on the general similarity of grammatical structures); Sapir does not conceal his disagreement with Herder's lightly formulated conclusion and his patent neglect of historical perspective.

The last pages of Sapir's article deal with the reception (especially by J.G. Hamann)[33] of Herder's text and its impact on later scholars, and they contain a brief history of the language origins theme. Here we have to note Sapir's reliance on secondary literature,[34] especially the works of Nevinson,[35] Haym,[36] and Steinthal.[37]

Sapir's master thesis, while testifying to his broad linguistic interests and to his fascination with the basic problems in the study of language, is a theoretically modest —and moderate— contribution. His critical remarks on Herder, and on Herder's predecessors, are well-taken, but not very innovative. Also, Sapir does not go into the intricacies of the relationship between Herder, Humboldt and (neo-)Humboldtian linguistics, and his treatment of the late 19th-century "naturalistic"[38] views is confined to a brief mention of Friedrich Max Müller (and the criticisms formulated by William Dwight Whitney[39]).

Sapir does not offer a methodological contribution to the debate on the origin of language, as was to do Otto Jespersen[40] by distinguishing between

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[33] On Hamann's reaction, and Herder's "conversion" see J. Stam, *o.c.* [note 18], pp. 131–170.

[34] A cursory reference is made to Friedrich Lauchert, "Die Anschauungen Herders über den Ursprung der Sprache, ihre Voraussetzungen in der Philosophie seiner Zeit und ihr Fortwirken", *Euphorion. Zeitschrift für Literaturgeschichte* 1 (1894), 747–771, with respect to Herder's position in the history of linguistics. In Lauchert's article the influence of Herder is slightly overrated.

[35] Henry W. Nevinson, *A Sketch of Herder and his Times* (London, 1884).

[36] R. Haym, *o.c.* [note 11].

[37] H. Steinthal, *o.c.* [note 10].

[38] For a comprehensive study of "naturalistic linguistics" in the 19th century, see Piet Desmet, *La linguistique naturaliste en France (1867–1922). Nature, origine et évolution du langage* (Louvain/Paris, 1996); in this book the views of August Schleicher [1821–1868], Hermann Chavée [1818–1877] and Friedrich Max Müller [1823–1900] on the origin of language are discussed in detail (pp. 60–62, 65–66, 119–125), as a preliminary to the extensive analysis of the ideas of their French followers.

[39] Whitney's criticisms of Max Müller's views on language and religion were published in *North American Review* 100 (1865), 565–581, 113 (1871), 430–434, 119 (1874), 61–86, and *The Nation* 10 (1870), 242–244; they are brought together in his *Max Müller and the Science of Language. A Criticism* (New York, 1892).

[40] Otto Jespersen, *Progress in Language. With special reference to English* (London/New York, 1894), chapter 9 ("Origin of Language").

the origin of language and the origin of speech. Present-day research should in fact take into account the more subtle distinction between the origin of language and the origin of speech,[41] although one cannot but note that very often discussions on the origin of language blurr the distinction between concepts such as "communication," "language" and "speech". Nevertheless we should credit Sapir with having grasped the necessity of appealing much more strongly to (psycho)-biology and to (comparative and typological) linguistics, for further reflection on the origin of language, not in order to "solve" the problem, but with the purpose of putting it in proper perspective and context. "Despite Max Müller, however, it seems to me that the path for future work on the prime problems, more especially the origin, of language lies in the direction pointed out by evolution. A new element, the careful and scientific study of sound-reflexes in higher animals, must now enter into the discussion. Perhaps this, with a very extended study of all the various existing stocks of languages, in order to determine the most fundamental properties of language, may assist materially in ultimately rendering our problem more tractable" (p. 142).

Finally, while it may seem that this article —maybe because of its "compulsory" academic *raison d'être*— stands apart in Sapir's scholarly production, one should not forget that

(1) in his *Language*,[42] Sapir also discusses, though very briefly, the problem of the origin of language;

(2) already in his master's thesis Sapir proposes the definition of language[43] that he would later use in his general-linguistic discussions of "language" (in 1921 and in 1933);

(3) in dealing with the problem of the origin of language, Sapir hit upon his deepest and most pervasive linguistic interest: the history and variation of language [see the writings reprinted here in section II].

Pierre SWIGGERS

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[41] See the arguments advanced by Thomas A. Sebeok, "Signs, Bridges, Origins", in Jürgen Trabant (ed.), *Origins of Language, o.c.* [note 20], pp. 89–115.

[42] *Language* (New York, 1921), pp. 4–6.

[43] See p. 109: "the communication of ideas by means of audible, secondarily by means of visible, symbols." Compare *Language* (New York, 1921), p. 7: "Language is a purely human and non-instinctive method of communicating ideas, emotions, and desires by means of a system of voluntarily produced symbols;" and "Language" (*Encyclopaedia of the Social Sciences*, 1933, vol. 9, p. 155) [reprinted here in section VI]: "In the first place, language is primarily a system of phonetic symbols for the expression of communicable thought and feeling."

HERDER'S "URSPRUNG DER SPRACHE"

In 1769 the Berlin Academy gave out as the subject of a competitive prize essay the following, couched, as was customary, in French: "En supposant les hommes abandonnés à leurs facultés naturelles, sont-ils en état d'inventer le langage? et par quels moyens parviendront-ils d'eux-mêmes à cette invention?" There are two points in the wording of this theme which are interesting and characteristic of the time. In the first place, it will be noticed that the pivot of the discussion was to be this: whether language was of natural—i. e., human—or supernatural origin. It could by no means be taken for granted then, as normal investigators would nowadays, that the gift of speech was acquired by man in a purely normal way; the burden of proof, in fact, lay upon those who disputed the divine origin of language. In the second place, the query of the academy speaks of language as an "invention." Just as a machine is a tool, a means for bringing about certain desired mechanical effects, so language was looked upon as a tool, a means for bringing about certain other desired mechanical effects—namely: the communication of ideas by means of audible, secondarily by means of visible, symbols. And since history and experience showed, or seemed to show, that machines were "invented" by the application of certain powers of intelligence, the logic of parallelism seemed to require that also that most admirable tool called language should have been the "invention" of some intelligence. The only question, then, was this: Was the human mind intelligent and resourceful enough to invent so fine a machine, or did the latter require the master-hand of the Deity? *Voilà tout.*

The attitude of a modern linguist toward the proposed subject is certainly very different from that of the eighteenth-century philosopher. To the first half of the question he would unhesitatingly answer "Yes;" to the second he would reply: "Language was not invented in any true sense at all;" or, as Topsy would

put it: "It wasn't born, it growed." It is in these two points, after all, that the chief progress from the older to the modern view of the question lies; and for both of them, the doing away with the conception of divine interference, and the introduction of the idea of slow, but gradual and necessary, development from rude beginnings, we are very largely indebted to Herder. The very answer that Herder gave to the question posed made the question itself meaningless; henceforth there could be no serious and profitable discussion of the divine origin of language, while the crude conception of the "invention" of a language had to give way more and more to that of the unconscious, or, as we should perhaps say now, largely subconscious, development of speech by virtue of man's psychic powers. The question resolved itself into another: Just what factor or factors were most prominent in that exceedingly slow process of mental evolution that transformed a being giving vent to his emotions in inarticulate cries to one giving expression to a rich mental life by an elaborate system of auditory symbols? Despite the vast accumulation of linguistic material that has been collected since Herder's time, and the immense clarification that has been attained in linguistic conceptions, processes, and classifications, we cannot today make bold to assert that this problem is satisfactorily answered, or apparently in a way to be satisfactorily answered in the immediate future. Bearing this in mind, we shall be able more justly to value the great service Herder accomplished in merely shifting the point of view. That alone was an inestimable service.

It was to be expected that the proposed subject should appeal strongly to a mind of Herder's stamp, occupied, as it was, with problems touching the most important phases of human culture. We thus find him, while still in Nantes, writing to his publisher-friend Hartknoch that he was intending to work up the theme the following year. He speaks of it as "eine vortreffliche, grosse und wahrhaftig philosophische Frage, die recht für mich gegeben zu sein scheint."[1] The latest time at which the competing essays could be handed in was January 1, 1771; yet Herder did not set to work at the actual composition of his treatise until well on in

[1] R. Haym, *Herder nach seinem Leben und seinen Werken dargestellt*, Vol. I, pp. 400–403.

December, 1770, when his Strassburg period was drawing to a close. To excuse the peculiar defects of it, he wrote to Nicolai early in 1772 that it was written "flüchtig, in Eile, in den letzten Tagen des Decembers."[1] So rapidly, indeed, was this 166-page[2] essay composed that it was finished even before Christmas and was sent away anonymously, with accompanying billet, to Tourney, the secretary of the academy. This almost incredible rapidity of composition can be explained only by assuming, as we have every reason to do, that Herder had thought out the whole problem in considerable detail long before, or, as Suphan suggests, even made the first rough draft[3] at Nantes, and had now simply to mold these ideas into literary form. Although few would venture to call the *Preisschrift* a model of literary form, yet the distinctness of the theme and the short time in which it had to be got ready give the treatise "a directness and ease that is too often wanting in his other works."[4] In few other subjects had Herder been so deeply interested up to 1771 as in this one concerning the origin and development of language. As early as 1764, according to Suphan, he had drawn up a plan for the somewhat elaborate investigation of the origin of language, writing, and grammar. One of his contributions to the Riga *Gelehrte Anzeigen* dealt with the problem, "Wie weit alte und neue, fremde und die Muttersprache unsern Fleiss verdienen"—an essay that anticipates some of the striking phrases found in the *Preisschrift*. In his first important work, the famous *Fragmente*, Herder had already given expression to some of his later thoughts, among other things maintaining the human origin of language. When Süssmilch's *Beweis, dass die Sprache göttlich sei*, which had been read at the Berlin Academy ten years before publication, appeared in 1766, Herder was deeply interested, and wrote to Scheffner (October 31, 1767): "Da Süssmilch sich in die Sprachhypothese neulich gemischt und es mit Rousseau gegen Moses [i. e., Moses Mendelssohn] aufgenommen, so hätte ich wohl Lust,

[1] Haym, *op. cit.*

[2] As contained in Herder's *Collected Works*, edited by Johann von Müller (Carlsruhe, 1820).

[3] Distinguished by Suphan as "a." See p. xii, Vol. V, of his edition.

[4] Nevinson, *Herder and His Times*, p 162.

auch ein mal ein Paar Worte öffentlich zu sagen."[1] With what had been said on the subject by Rousseau, Condillac, Abbt, Lambert, and others, Herder was well acquainted, so that his own *Preisschrift*, while in every sense a *pathfinding* work, takes a definite historically conditioned place in the linguistic-philosophic speculations of the eighteenth century.

Before proceeding with the detailed analysis of Herder's epoch-making work, we must briefly consider the theories on the origin of language which prevailed at the time he wrote it. By far the most commonly held theory, at least in Germany, was that supported by Süssmilch, the orthodox view. According to this, language was given or revealed to man by God. The power to create the subtle mechanism of speech was considered by the supporters of this theory beyond the earliest human beings; they had to receive the first rude concept of language, the first fruitful suggestions, at least, from without. In earlier stages of linguistic speculation, particularly at the time of the Reformation, it was believed, on inferred biblical evidence, that this earliest God-made language was the Hebrew tongue, from which all other idioms, the Greek and Latin as well as the Chinese, were derived by processes of corruption, transposition of letters, or what not. In Herder's day, however, it was no longer considered necessary by all supporters of the orthodox view to maintain the absolute primitiveness of Hebrew, although Hebrew was regarded, among others by Herder himself, as a peculiarly primitive or "original" language. Many deemed it sufficient to assert the revelation to man of *some* form, however imperfect, of speech, and were willing to concede the possibly somewhat late advent of the Holy Tongue. We can easily understand some of the reasons that led to the support of this, it is needless to say, now wholly antiquated view. In the first place, scriptural evidence, in general, seemed to imply the divine origin of language; although we are told that the Lord brought the various denizens of the field and forest before Adam, that he might give them names, still this appears to have been done under careful paternal supervision. In the second place, there was good, in fact irrefutable, evidence, from an orthodox

[1] See Haym, *op. cit.*, Vol. I, p. 402.

point of view, for the divine authorship of the industries; and it seemed illogical to suppose that a much higher factor of civilization than the industries, namely language, had been left to the ingenuity of primitive man. In the third place, the less than six thousand years which had elapsed since the creation of the world were looked upon, and with good reason, as quite inadequate for the development from the crudest possible beginnings of our modern, richly organized languages. Even long after Herder had demonstrated the untenableness of the orthodox theory, many scholars still clung to a view which made God, as Goethe put it, "a kind of omnipotent schoolmaster." I note, by way of illustration, that our Noah Webster still considered it the most probable explanation. From a psychological point of view, granting the possibility of revelation, the theory is, of course, absolutely useless. Its advocates do not seem to have perceived that the imparting of a language to the first speechless human beings, accompanied, as it presumably was, by grammatical instruction, must have been a fairly impossible task, implying, in fact, linguistic training in the recipient; moreover, the theory begged the question, by assuming the existence of what it set out to explain. The modern critical standpoint has been well, if somewhat cynically, formulated by Fritz Mauthner in his entertaining *Kritik der Sprache:*

> Wir wissen kaum, was der abstrakte Begriff Sprache bedeutet, wir wissen noch weniger, wie wir den Begriff Ursprung zeitlich begrenzen sollen, wir wissen gar nicht mehr den Gottesbegriff zu definieren; da können wir mit dem "göttlichen Ursprung der Sprache" wirklich nicht mehr viel anfangen.[1]

A second theory, supported notably by Rousseau and the German Rationalists, was very similar in character to the contract-theory of the origin of government, also held by Rousseau. They conceived the matter approximately thus: Primitive men, after having long been compelled to get along without speech, at last awoke to a consciousness of the manifold inconveniences of their then condition; were in particular troubled by the important problem of communicating ideas. To remedy, if possible, this

[1] Fritz Mauthner, *Kritik der Sprache*, Vol. II, "Zur Sprachwissenschaft," p. 353.

deplorable state of affairs, our primitive ancestors, or perhaps only the wisest of them, put their heads together to devise ways and means for the more practicable interchange of thoughts. After much cogitation—not deliberation, for language was not as yet—they hit upon the excellent device of representing things and actions to each other by means of arbitrarily chosen symbols, presumably auditory. Henceforth they had no difficulty in understanding each other, civilization progressed more rapidly than heretofore, and all was well. One is amazed to find that men in the eighteenth century were willing to maintain so ridiculous a theory, even if not presented in quite so absurd a light as above. It is not difficult to point out the vicious circle implied therein. Man could not conceivably have advanced so far as to perceive the advantages of speech as a means of communication without already being possessed of it; on the other hand, if primitive man could already successfully communicate such abstract ideas as those of symbols, one fails to see the necessity of a change in method.

A far more valuable theory than these two was that held by the English and French "naturalists," though a crude, mechanistic psychology makes their speculations often seem rather infantile today. The "naturalists," generally speaking, were inclined to look upon language as a reflex, expressed in cries, of the sensations and perceptions imprinted upon the human mind by man's environment. They considered the growth of a vocabulary absolutely co-ordinated with the growth of experience, and were pretty sure, most of them, that untaught children, if isolated from the companionship of their fellow-beings, would develop a language of their own. Condillac, probably the most profound of the *philosophes*, attempted in his *Essai sur l'origine des connoissances humaines* to show how two human beings of opposite sex might naturally be led to acquire speech. He supposes that at the outset all their desires and emotions are expressed by purely instinctive cries, accompanied by violent gestures. By the psychic processes of memory and association these cries gradually come to serve as the fixed means of communicating the more elementary feelings, such as fear, joy, and the like. Says Condillac:

Meanwhile, while these human beings have acquired the habit of associating several ideas with arbitrary signs, the natural cries served them as model to make a new language. They articulated new sounds and, repeating them several times and accompanying them by some gesture which indicated the objects they wished to call attention to, they accustomed themselves to giving names to things. At first the progress of this language was extremely slow. The organ of speech was so inflexible that it could articulate only a few very simple sounds. The obstacles that presented themselves in pronouncing others even prevented them from suspecting that the voice was capable of moving beyond the small number of words they had imagined. This pair had a child, who, pressed by wants that he could give expression to only with difficulty, violently moved all the limbs of his body. His very flexible tongue curled itself in an extraordinary manner and pronounced an entirely new word. The want, still continuing, again gave rise to the same effects; this child moved his tongue as before, and again articulated the same sound. The surprised parents, having finally guessed what he wished, attempted, while giving it to him, to repeat the same word. The difficulty they had in pronouncing it made it evident that they would not of themselves have been able to invent it.[1]

In such wise Condillac thinks their language would be slowly and painfully enriched; not until after many generations would a language in our sense be approximated. A fairly ingenious theory, and much to be preferred to either the orthodox or the rationalist views, yet not truly convincing. The great difficulty that Herder found with it was the failure to draw a sharp line between the instincts of the animals and the higher mental powers of man. One does not clearly see why, according to Condillac, the animals should not have likewise developed a language. Herder, although he inclined on the whole to the views of the French "naturalists," attempted to avoid their shallow mechanistic psychology, and was chiefly concerned in showing that the peculiarly human faculty of speech was a *necessary correlative* of certain distinctly human psychic conditions.

The analysis of Herder's views here given is based, not on the second edition of the prize essay (Berlin, 1789), but on its first published form (Berlin, 1772), as given in Suphan's edition of Herder. Following the formulation of the academy's theme, he divided his treatise into two parts, the first answering the ques-

[1] *Œuvres de Condillac* (Paris, 1798), Vol. 1, pp. 264, 265.

tion: "Haben die Menschen, ihren Naturfähigkeiten überlassen, sich selbst Sprache erfinden können?"[1] the second dealing with the problem: "Auf welchem Wege der Mensch sich am füglichsten hat Sprache erfinden können und müssen?"[2]

Herder begins his treatise with the postulation of a "natural law." All the higher animals involuntarily respond to their emotions, particularly the more intense ones, such as pain, by cries. As Herder formulates the "law": "Here is a sentient being, unable to inclose within itself any of its intense feelings; which, in the first moment of surprise, must give expression in sound to every feeling, even without intention and purpose."[3] But this sentient being is not an isolated phenomenon. There are other beings, besides itself, similarly constituted, that respond to like stimuli in the same way. Hence the instinctive cries of each sentient being find a responsive echo in other beings of like organism, very much as a vibrating string will cause other strings to vibrate that are pitched in harmony to itself. These tones constitute a species of language, "a language of feeling" directly given by nature (*unmittelbares Naturgesetz*); its genesis it does not occur to Herder to explain. Such natural cries are not peculiar to the animals, but are shared also by man. No matter how highly developed a language may be, it always includes a number of vocables that are intelligible *per se* as emotional expressions. These are represented on paper—with miserable inadequacy, as Herder strongly emphasizes—by the interjections (such as *ach*, *O*, and so forth); their real existence, however, is in their utterance in the appropriate emotional milieu. It is true that in our modern, metaphysically refined idioms, these emotional elements play a very subordinate rôle, but in the older oriental and in the primitive tongues Herder thinks to find more numerous survivals of the earliest linguistic conditions. It may be noted that all through the essay Herder, quite uncritically from our modern point of view, considers the oriental, by which he means one or two Semitic, dialects and the languages of primi-

[1] *Herder's Sämmtliche Werke*, herausgegeben von Bernhard Suphan (Berlin, 1891), Vol. V, p. 3.

[2] *Ibid.*, p. 91.

[3] *Ibid.*, p. 6.

tive peoples as essentially more "original" than our modern vernaculars. We should never forget that Herder's time-perspective was necessarily very different from ours. While we unconcernedly take tens and even hundreds of thousands of years in which to allow the products of human civilization to develop, Herder was still compelled to operate with the less than six thousand years that orthodoxy stingily doled out. To us the two or three thousand years that separate our languages from the Old Testament Hebrew seems a negligible quantity, when speculating on the origin of language in general; to Herder, however, the Hebrew and the Greek of Homer seemed to be appreciably nearer the oldest conditions than our vernaculars—hence his exaggeration of their *Ursprünglichkeit.* The supposedly "primitive," or rather "original," character of the languages of savages was due to a very natural, though, unfortunately, on the whole erroneous, conclusion from *à priori* considerations.

Herder next proceeds to take up and refute one of Süssmilch's arguments for believing that language is God's direct work. Süssmilch contended that it was evident in the alphabetic uniformity of all languages, pointing to an original divine simplicity; all the sounds found in the multiform idioms of the earth, he thought, could be adequately represented by about twenty letters. This queer argument Herder conclusively showed to be a mere orthographic quibble. It is a huge fallacy, as Herder clearly saw, to imagine that even *one* language could be perfectly represented by an alphabet at all, let alone one of twenty letters. He recognizes, apparently as clearly as any modern linguist, that the real elements of language are spoken sounds of which letters are but makeshift and imperfect substitutions. He quotes from travelers as to the extreme difficulty of representing many of the dialects of primitive peoples through the medium of our letters; but he calls attention also to the very faint idea that one gets of even spoken English and French from the written forms of those languages. That a comparatively "original" language (I speak in Herder's terms) like the Hebrew did not orthographically represent the vowels is due, he thinks, to their finely modulated, natural, almost unarticulated character. "Ihre Aussprache war so

lebendig und feinorganisiert, ihr Hauch war so geistig und athemisch, dass er verduftete und sich nicht in Buchstaben fassen liess."[1] Hence he concludes that the nearer a language comes to the original conditions, the less possible to mirror it in orthographical symbols.

After this digression on the Süssmilch argument, Herder returns to a consideration of the natural emotional sounds of man and the animals: he emphasizes the great influence that these still have emotionally, and sees in them the closest bond of union between the various members of animated creation. "Their origin," Herder declares, "I consider very natural. It is not only not superhuman, but evidently beastlike (*thierisch*), the natural law of a machine capable of feeling."[2] But—and here comes a critical point in Herder's argument—it is impossible to explain the origin of human language from these emotional cries.

> All animals, down to the dumb fish, give vent to their feelings in tones; but no animal, not even the most perfect, has on that account the slightest genuine disposition toward a human language. Let one form and refine and fix this natural cry as one will; if no understanding is present, so as purposely to use the tone, I fail to see how human, conscious language is ever going to arise. Children utter emotional sounds, like animals: is not the language, however, that they learn from men quite another idiom?[3]

All writers, notably Condillac and Maupertuis among the French *philosophes*, and Diodorus and Vitruvius among the ancients, that have attempted to derive human speech from instinctive animal cries, are, then, on the wrong path at the very outset of their investigations. Since, among all living beings, man alone has developed a language, in the ordinary sense of the word, and since it is, after all, this power of speech which chiefly separates man from the animals, any rational attempt to explain its origin would have to begin with a consideration of the essential psychic differences between the two. Herder, consequently, proceeds to seek for the most fundamental of these psychic differences, and finds it in this, "that man is far inferior to the animals in strength and sureness of *instinct;* indeed, that he lacks

[1] Herder, *op. cit.*, p. 13. [2] *Ibid.*, p. 17. [3] *Ibid.*, pp. 17, 18.

entirely what in so many animal species we term inborn art-capabilities or impulses (*Kunstfähigkeiten und Kunsttriebe*)."[1] This inferiority in instinctive power Herder ascribes to a greater sphere of attention and activity on the part of man. Herder finds by observation "that the sharper the senses of the animals, and the more wonderful their works of art, the narrower their sphere, the more uniform their art-work;"[2] and inversely, "the more scattered their attention to various objects, the more undefined their mode of life, in short, the larger and more manifold their sphere, the more do we see their sense-powers divided and weakened."[3] Now all instincts, even such complicated ones as those we see manifested in the construction of beehives and spider-webs, are to be explained by the intense, specialized activities of the senses within a narrow sphere. Hence Herder feels justified in assuming that intensity of the senses and perfection of instinct are in inverse proportion to the amplitude of the sphere of attention. Since man has the widest possible sphere, is the least specialized of all creatures in his activity, it follows that he is least endowed with inborn mechanical dispositions; in other words, is at birth apparently the most helpless of all living beings. It is inconceivable, however, that nature should have acted in so stepmotherly a fashion as to intend man for the widest field of activity, and at the same time fail to grant him powers successfully to maintain himself in his complex environment. There must be some psychic element which secures him his due position in the world; if we succeed in discovering this psychic element, we shall also have obtained the distinctive characteristic of man; and if, furthermore, we can show the human faculty of speech to be a resultant of this mental characteristic, our problem is practically solved. The peculiarly human characteristic sought is conditioned by the wide range of attention; for this latter implies that the human senses, unrestricted to any narrowly specialized field, are left free for development and the acquisition of *clearer* impressions. Now, this clearness of view leads to what is variously termed understanding, reason, judgment. Herder, who is alone to be held responsible for the psychology of all this,

[1] *Op. cit.*, p. 22. [2] *Ibid.*, p. 22. [3] *Ibid.*, p. 23.

is indifferent about the name applied (he himself suggests *Besonnenheit*, "reflection"); he very strongly emphasizes, however, that this *Besonnenheit* is not a faculty superimposed upon the lower animal mind-elements and transforming them into the human mind, but rather a certain disposition or aspect of the really unanalyzable unity called the "mind." It is truly refreshing to find Herder, in the age of neatly pigeon-holed faculties, boldly asserting these to be but more or less convenient abstractions; to Herder the human "mind" is an indivisible entity, in no wise genetically related to the animal mind. As he expresses it: "Der Unterschied (zwischen der menschlichen und der tierischen Seele) ist nicht in Stufen, oder Zugabe von Kräften, sondern in einer ganz verschiedenartigen Richtung und Auswickelung aller Kräfte."[1] Furthermore, *Besonnenheit* must have been present in the human race from the very start, must have been implanted in it by the Creator; although this, of course, does not mean that it is not capable of growth with the increase of experience. Any attempt, then, to bridge over the gulf separating man and the animal world is to Herder absurd.

Does not reflection or *Besonnenheit*, however, imply the invention—or, better, genesis—of language? Herder proceeds:

> [Der Mensch] beweiset Reflexion, wenn er aus dem ganzen schwebenden Traum der Bilder, die seine Seele vorbeistreichen, sich in ein Moment des Wachens sammlen, auf einem Bilde freiwillig verweilen, es in helle ruhigere Obacht nehmen, und sich Merkmale absondern kann, dass dies der Gegenstand und kein andrer sei. Er beweiset auch Reflexion, wenn er nicht bloss alle Eigenschaften lebhaft oder klar erkennen; sondern eine oder mehrere als unterscheidende Eigenschaften bei sich anerkennen kann; der erste Aktus dieser Anerkenntniss[2] giebt deutlichen Begriff; est ist das erste Urtheil der Seele.[3]

Further, the singling out and apperception of any attribute, the formation of a clear concept, is in itself, in the true sense of the word, language, even though it be not uttered; for language can very well be defined as series of associated attributes or concepts, symbolically interpreted. For the purpose of illustration, Herder

[1] Herder, *op. cit.* p. 29.

[2] By *Anerkenntniss* Herder means about as much as "apperception."

[3] *Op. cit.*, p. 35.

supposes a sheep to pass by primitive man.[1] The latter, with mind unobscured by the wolfish instinct to tear the sheep to pieces, will, by virtue of his power of *Besonnenheit*, quietly perceive the white, wooly phenomenon. Suddenly the sheep bleats; involuntarily primitive man picks out this remarkable sound as the characteristic attribute in the complex of sensations presented to him by the sheep. The sheep crosses his path once again. Primitive man, not yet fully practiced in the apperception of objects, does not at first recognize his wooly friend. But the sheep again bleats, whereupon he remembers the similar sound heard before; the characteristic attribute then, in this case the bleating, serves to establish the identity of the two sensation-groups. Ever thereafter the remembered audible image of bleating will associate itself with the totality of images, visual, tactile, and others, that go to make up the phenomenon *sheep*. Does not this mean that the image of bleating becomes the *name* of the object, even though the speech-organs of primitive man never attempt to reproduce the sound? With the acquisition of a number of constant images of apperceived attributes language is now fairly begun, and is shown to be, in Herder's opinion, a necessary corollary of the postulated *Besonnenheit*, peculiar to man.

At this point Herder takes up certain arguments advanced by some to prove the impossibility of the human origin of language. Süssmilch contended that without the use of language no act of reason was possible. Consequently man, in order to reason, must have been in prior possession of the gift of speech. But it is impossible that he should have himself invented it; for reason, not yet in operation, would evidently have been necessary therefor. The only way out of the difficulty, then, is to assume that God first taught man the use of language, by the employment of which the exercise of reason followed. Herder has no difficulty in showing the circle in the argument. If man was to grasp the linguistic instruction of God, and not simply repeat his words in parrot-like manner, he must already have been in possession of an elaborate complex of concepts and, therefore, also of language; for, according to his analysis, the genesis of the two is

[1] The illustration was borrowed by Herder from Moses Mendelssohn.

simultaneous. To seek a parallel for divine instruction in the language-teaching of children by their parents is of no avail. The child recognizes most attributes and acquires his store of concepts by his own unaided experience—that is, the real acquisition of language is his own unaided work; all that the parents do is to force him to label his stock of concepts with those arbitrary symbols which they happen to use themselves.

So far Herder has discussed only the singling-out of attributes in general. The question now arises which attributes are most likely to be picked out originally as the first elements of language. The sense of sight, Herder believes, develops at the start with too great difficulty to allow visual attributes to be seized upon as the characteristic ones of objects; moreover, light-phenomena are too "cold" (this is Herder's term) to appeal to primitive man. The lower senses, notably that of touch, on the other hand, receive impressions that are too coarse and undefined for the purposes of speech. It remains, then, for the sense of hearing to give the characteristic attributes and, as Herder expresses it, become *Lehrmeister der Sprache.* Thus the sheep, as we have seen, becomes to man the "bleater;" the dog, the "barker;" the wind, the "rustler;" and so on indefinitely. The abstraction, then, of sound-attributes, coupled with a mechanical and spontaneous imitation of these, forms the first vocabulary of man. The biblical sentence, "Gott führte die Thiere zu ihm, dass er sähe, wie er sie nennte, und wie er sie nennen würde, so sollten sie heissen," Herder chooses to consider a poetical, peculiarly oriental rendition of the soberly expressed philosophic truth: "Der Verstand, durch den der Mensch über die Natur herrschet, war der Vater einer lebendigen Sprache, die er aus Tönen schallender Wesen zu Merkmalen der Unterscheidung sich abzog."[1]

If language were the invention of the Creator, we should expect to see his spirit—that is, pure reason—reflected in his work. But such is by no means the case. Pure reason or logic would require us to seek nouns as the most original constituents of the vocabulary of a language; for evidently, in strictly logical reasoning, the subject comes before the predicate, the thing

[1] Herder, *op. cit.*, p. 50.

that acts before the action. As a matter of fact, however, the radical elements of languages are not substantive in character, but verbal; this we can explain, if we bear in mind that primitive man was most impressed by sounding actions (*tönende Handlungen*). Since these actions were manifested in certain objects, it followed that the latter were named by the same natural sounds as the former; thus we have *nouns* developing out of *verbs*, and not vice versa. "The child names the sheep, not as sheep, but as a bleating animal, and thus turns the interjection into a verb."[1] All old and primitive languages clearly show, Herder is very sure, the verbal origin of nouns, and a philosophically arranged dictionary of an oriental language would be "a chart of the course of the human spirit, a history of its development, and . . . . the most excellent proof of the creative power of the human soul."[2] It is somewhat strange to find as keen a mind as Herder's occupying itself with so useless and at bottom meaningless a problem as the priority of the parts of speech. It goes without saying that in the earliest period of language-formation there could not have been the slightest differentiation in word-functioning. Making use of Herder's favorite example, there is no reason to suppose that the remembered audible sensation "bleating" should originally have had more reference to the action of bleating than to the sheep itself. We shall probably be nearer the truth if we assume that the word made in imitation of bleating was employed to signify all that had reference to the remembered phenomenon. The word, which we may assume for the sake of argument to be "baa," might in modern terms signify "to bleat," "sheep," "wooly," or what not; only we must beware of imagining that "baa" had any clearly defined grammatical function. Herder speaks of the sheep as "ein *blöckendes* Geschöpf;" noting that *blöckend* is a verbal form, he concludes that the verb was the original part of speech.

Nature, Herder proceeds, appears to man as a resounding (*tönend*) whole; hence man infers that nature is animated, living, and personifies all the phenomena presented to his consciousness. By this peculiarly human tendency to vivify the inanimate and

[1] *Op. cit.*, pp. 52, 53. [2] *Ibid.*, p. 54.

relate to his own experience the vast sea of extra-human phenomena can be easily explained the most primitive religions, the grammatical category of sex-gender, which Herder, erroneously of course, seems to imagine is particularly widespread, and, above all, the genesis of poetry. For what was this earliest language, imitating the sounds of living nature and expressing ideas in vivid imagery, but poetry? Furthermore, this language was song, not learned, as Herder well shows, from the birds, but "song, that was as natural to him, as suited to his organs and natural impulses, as the nightingale's song to herself." "All nature sang and resounded, and the song of man was a concert of all these voices; in so far as his understanding needed them, his feeling grasped them, [and] his organs could give expression to them."[1] That the oldest song and poetry are derived from this primeval condition of identity of song and language Herder considers proved; he is inclined to look upon the Homeric poems as survivals from this earliest time; and even today the originally musical character of speech is attested by the accents of many savage idioms.

All of this enthusiastic speculation of Herder's on the singing-speech of primitive man—ideas which he had already developed in the earlier *Fragmente*—must now, of course, be taken with a grain of salt. That song and poetry are among the most natural forms of expression, and are found, inseparably linked, practically all over the world, is now fully recognized. Moreover, we have no difficulty in supposing that the earliest forms of language were more expressive emotionally than now; the human voice may, very possibly, have had a more decided pitch-modulation, have moved at greater musical intervals, than now, and thus have produced much of the effect of song. Even this, however, is mere speculation. But to suppose that the earliest speech was, in any true sense of the word, melodic song, from which the vocal art of the Greeks could be more or less directly derived, is to be considered the wildest and most improbable fancy. As to the finished art-works of Greece being survivals from Herder's hypothetical period of spontaneous poesy, *that* needs no comment here.

It is not difficult to understand how objects that have distinctive

[1] Herder, *op. cit.*, p. 58.

sound-attributes, such as a bleating sheep, can be symbolized by sound images. But how is it with phenomena that do not of themselves suggest suitable audible symbols? How are the impressions of sight and feeling, taste and smell, to be naturally expressed in terms of auditory impressions? Herder seeks the solution of this puzzling question in a psychologic truth, which one is somewhat surprised to see grasped so clearly in the eighteenth century. His remarks are so illuminating that I cannot do better than quote from them:

> What are these properties [i. e., of sight, hearing, etc.] in objects? They are merely sensed impressions *in us*, and as such do they not all flow into one another? We are one thinking *sensorium commune*, only affected on various sides—therein lies the explanation. Feeling underlies all senses, and this gives the most disparate sensations, so intimate, strong, indefinable a bond of union, that out of this combination the strangest appearances arise. There is more than one instance known to me of persons who, naturally, perhaps from some impression of childhood, could not do otherwise than directly combine by some rapid mutation [we should say "association" nowadays] this color with that sound with this appearance that entirely different, indefinite feeling, that, when viewed through the light of slow reason, has absolutely no connection therewith: for who can compare sound and color, appearance and feeling?[1]

From this now experimentally well-established psychologic law of an ever-present, at times indefinite but always real, undercurrent of feeling, accompanying and coloring the ever-flowing stream of sensation, Herder derives a somewhat nebulously stated corollary, an application of the law to the genesis of language. He declares:

> Since all senses, particularly in the condition of man's childhood, are nothing but forms of feeling of *one* mind; and since all feeling, according to an emotional law of animal nature, has directly its own vocal expression; therefore, if this feeling is heightened to the intensity of a characteristic mark (*Merkmal*), the *word* of external language is there.[2]

Furthermore:

> Since man receives the language of nature only by way of hearing, and without it cannot invent language, hearing has, in some manner, become the central one of his senses, the gate, as it were, to the mind, and the bond of union between the other senses.[3]

[1] *Op. cit.*, p. 61. [2] *Ibid.*, p. 64. [3] *Ibid.*, p. 64.

That the sense of hearing does really occupy so relatively important a place is, of course, at least questionable; but Herder, undismayed by disquieting doubts, proceeds to give six reasons for thinking so. First, hearing occupies a medial position among the senses in regard to range of impressivenesss (*Sphäre der Empfindbarkeit*); being richer than the tactile, and less overwhelming and distracting than the optic, sense. Thus it stands in the closest connection of any with the other senses, and is well adapted to serve as a transformer into linguistically usable images of the impressions conveyed through the medium of sight and touch. Secondly, hearing is a middle sense in the matter of clearness; the sense of touch gives too dull, undefined impressions, while the impressions of sight are too bright and manifold. Hearing effectively heightens the former, modifies the latter. Thirdly, hearing occupies a middle position as regards vividness (*Lebhaftigkeit*); feeling is too warm a sense, lodges itself too deeply and overpoweringly in one's consciousness, while visual impressions are too cold and leave one indifferent. The auditory sense is, then, for the whole mind, what the color green, as it were, is for the visual sense—neither too dull nor too intense. Fourthly, hearing is the middle sense in respect to the time in which it operates; tactile impressions are sudden and momentary; those of sight, on the other hand, confuse by their simultaneity. As opposed to these, auditory impressions generally take place in progression—not very much is offered at any one moment, but the flow of auditory sensation is fairly continuous. Fifthly, the images induced by the sense of hearing need outward expression. Impressions produced by feeling are too dark and self-centered to need such expression; the objects revealed by the sense of sight are generally permanent and can be indicated by gesture; "but the objects that appeal to hearing" Herder says, "are connected with motion: they slip by; but just on that account they give rise to sounds. They are capable of expression because they must be expressed, and because they must be expressed, because of their motion, they become capable of expression."[1] This quotation is a fair specimen of Herder's method of ratiocina-

[1] *Op. cit.*, p. 67.

tion at times. Sixthly and finally, hearing is the middle sense in point of order of development, feeling coming before and sight after. Thus Herder proves, apparently to his own entire satisfaction, that all the impressions of sense become capable of adequate linguistic expression by way of their close connection with the supposedly middle sense — that of hearing. Let us not bother with an unprofitable critique of Herder's antiquated and subjectively confused psychology, and consider it proved, for the sake of his argument, that all intense outward stimuli, no matter of what description, find their natural response in vocal expression.

Herder next proceeds to lay down a series of theses on the characteristics of "original" (*ursprünglichen*) languages, the purpose of which is to show how clearly the imprint of the human mind is visible in them. This to us is very axiomatic, but we should not forget that it was necessary for Herder to demonstrate it in order to disprove the orthodox theory of divine origin. The first of these *Sätze* reads: "The older and more original languages are, the more is this analogy of the senses noticeable in their roots."[1] Where we characterize in terms of sight or feeling, the oriental often prefers to have recourse to the sense of hearing. "Anger," for instance, is most commonly in later times thought of in terms of visual phenomena, such as blazing eyes and glowing cheeks; the oriental, however, finds its characteristic mark in the fierce snort of the nostrils.[2] Again, "life" is to most of us moderns best characterized by the pulse-beat, while the oriental *hears* in the living breath the most salient element of animated existence. And so on indefinitely.

Herder's second thesis reads: "The older and more original languages are, the more do the various shades of feeling cross each other in the roots of the words."[3] He proceeds:

> Let one open any oriental lexicon at random, and one will perceive the struggling desire to express ideas! How the inventor tore out ideas from one feeling and borrowed them for another! How he borrowed most of all from the most difficult, coldest, clearest senses! How every

[1] *Op. cit.*, p. 70.

[2] Herder had in mind probably Heb. *'aph* "anger", dual *'appayim* "nostrils."

[3] *Op. cit.*, p. 71.

thing had to be transformed into feeling and sound, in order to gain expression! Hence the strong, bold metaphors in the roots of words! Hence the extensions from feeling to feeling, so that the meanings of stem-words and, still more so, those of their derivatives, when put next to each other, present the most motley picture. The genetic cause lies in the poverty of the human mind and in the flowing together of the emotions of a primitive human being.[1]

The whole discussion of the metaphorical character of "original" languages is one of those wonderfully intuitive bits of insight that one meets with frequently enough in Herder's writings. He saw clearly the perfectly natural, and, indeed, psychologically inevitable, play of metaphor that runs through the history of language. This was remarkable at a time when figures of speech were thought to be the artistic flowers of polite literature. The modern semasiologist can, however, be bolder than Herder. He recognizes clearly that metaphor operates with equal power at all periods in the development of a language, not chiefly in the relatively older phases, as Herder thought, but just as well in times nearer the present. Moreover, he is inclined to believe that not merely a large part of the vocabulary of a language is metaphorically transferred in meaning, but that practically all of it has undergone an indefinite number of gradual semantic transmutations.

Herder's third thesis is as follows:

The more original a language is, the more frequently do such feelings cross in it; the less easily can these be exactly and logically subordinated to one another. The language is rich in synonyms; alongside of real poverty it has the most unnecessary superfluity.[2]

How can so ill-arranged a mass of material be the work of God? As coming from the hand of man, however, the presence of synonyms is entirely explicable. Herder argues:

The less acquainted one was with natural phenomena; the more aspects one could in inexperience observe therefrom and hardly recognize; the less one invented *à priori*, but rather according to circumstances of sense: the more synonyms.[3]

This great wealth of synonyms is seen not only in the proverbial two hundred words of the Arab for "snake" and about one

[1] *Op. cit.*, p. 71. [2] *Ibid.*, p. 75. [3] *Ibid.*, p. 76.

thousand for "sword," but also in most languages of primitive tribes. Herder points out that the latter, although often lacking terms for ideas which seem to us most necessary of expression, frequently possess an astonishing wealth of words for ideas but slightly differentiated in our own minds.

As fourth canon Herder enunciates the following:

> Just as the human mind can recall no abstraction out of the realm of spirits which it did not obtain by means of opportunities and awakenings of the senses, so also our language contains no abstract word which it has not obtained by means of tone and feeling. And the more original the language, the fewer abstractions, the more feelings.[1]

That all abstract ideas are originally expressed in terms of concrete images is almost self-evident, and Herder has, indeed, little difficulty in proving his point. Again he has recourse for his illustrations to the language of the Orient and of primitive peoples. "Holy" was, for instance, originally "set apart" in meaning; "soul" meant really "breath." Missionaries and travelers unanimously testify to the great difficulty of rendering abstract terms in the idioms of comparatively uncultured peoples; the history of civilization shows that many of the terms used in philosophy and other regions of abstract thought are simply borrowed from the vocabularies of nations already farther advanced in speculation. All this, Herder rightly emphasizes, points to the operation of purely human powers; no terms are found for abstractions not absolutely necessary to the thought of the people who use them, while in every case such terms are originally of purely sensational origin. Surely there can be no talk here of divine intervention, where only human weakness is manifest.

Herder's fifth and last thesis runs:

> Since every grammar is only a philosophy of language and a method of its use, it follows that the more original the language, the less grammar there must be in it, and the oldest [language] is simply the vocabulary of nature.[2]

Herder devotes several pages to a consideration of this matter, but his whole treatment seems now confused and antiquated. One acquainted with the elaborate formal machinery, particularly in

[1] *Op. cit.*, p. 78.

[2] *Ibid.*, pp. 82, 83.

regard to the verb, of the Semitic and of many North American Indian languages, both of which Herder considered particularly "original" in character, will be inclined to deny point-blank the validity of his thesis. Herder, however, is not blind to this grammatical complexity. On the contrary, he asserts, paradoxically enough, that this very complexity is a sign of the lack of a true grammatical sense. He thinks that those languages that make use of complicated grammatical schemes show thereby their inability to arrange their material systematically and logically; the Germans or French, for instance, he implies, with fewer paradigms, have more of a grammar in the true sense of the word. Speaking more particularly of verb-forms, he says:

> The more conjugations [are found], the less thoroughly one has learned to systematize concepts relatively to each other. How many the orientals have! and yet they are not such in reality, for what transplantations and transferences of the verbs are there not from conjugation to conjugation! The matter is quite natural. Since nothing concerns man so much, at least appears to him so linguistically suitable, as that which he is to narrate: deeds, actions, events; therefore, such a multitude of deeds and events must originally have been gathered that a new verb arose for almost every condition.[1]

Herder's arguments do not, it is almost needless to observe, bear inspection. Herder thought of grammar, as was very natural in the eighteenth century, as something which was, with increasing civilization, brought to bear on language from without. With this conception in his mind, it seemed that to admit the existence of complex grammatical form in "original" languages was playing into the hands of Süssmilch. Today, however, owing to the vast stock of comparative and historic linguistic material at our disposal, we see clearly that grammar, so far from needing the loving attention of the grammarians, takes very good care of itself and develops along definite lines. We need not, therefore, deal in paradoxes and can admit, with a clear conscience, that many typically "original" languages, to adopt Herder's now unserviceable terminology, possess *truly* grammatical features of incredible complexity, as in the case of the Eskimo verb or Bantu noun.

[1] *Op. cit.*, p. 83.

Herder ends the first part of his prize essay with a paragraph which contains the following statement:

> Ich bilde mir ein, das Können der Empfindung menschlicher Sprache sei mit dem, was ich gesagt . . . . so bewiesen, dass wer dem Menschen nicht Vernunft abspricht, oder, was eben so viel ist, wer nur weiss, was Vernunft ist: wer sich ferner je um die Elemente der Sprache philosophisch bekümmert, ... der kann nicht einen Augenblick zweifeln, wenn ich auch weiter kein Wort mehr hinzusetze.[1]

And, indeed, Herder might have logically concluded the essay at this point, though we should not like to miss some of the thoughts in the second part. The form of the question as put by the academy, seemed, however, to Herder to demand an arrangement of his subject-matter into two distinct parts. Inasmuch as both of the queries posed are practically answered by Herder in the first part, we need not analyse in detail the trend of his argument in the second, which ostensibly discusses "auf welchem Wege der Mensch sich am füglichsten hat Sprache erfinden können und müssen," but which, in reality, deals chiefly with the gradual development of language. It is itself subdivided into four sections, each of these discussing a natural law operative in this development.

The first of these *Naturgesetze*, which Herder takes so seriously as to put in the imperative form, reads: "Man is a freely thinking, active being, whose powers work on progressively; therefore he shall be a creature of language (*Geschöpf der Sprache*)."[2] As the wording of this law implies, Herder here recapitulates, with amplifications, a good deal of what he had already presented in the first part. But there is a new thought introduced here—that of development in the line of progress. The gift of speech is, it is true, as characteristic of man as the ability to construct a hive is native to the bee—with this notable difference: the bee, acting mechanically by virtue of its inborn instinctive powers, builds as efficiently the first day as the last, and will build so, Herder believes, to the end of time; the language of man, however, increases in power and efficiency with every use that is made of it. The reason for this law of linguistic growth in the individual is evident when we consider the relation

[1] *Op. cit.*, p. 89. [2] *Ibid.*, p. 93.

between thought and language. "There is no condition of the human mind," Herder says, "which is not capable of linguistic expression or not really determined by words of the mind (*Worte der Seele*)."[1] Hence growth in the power of reflexion or *Besonnenheit*, conditioned by the growth of experience, entails also advance in the employment of language. "The growth of language," as Herder puts it, "is as natural to man as his nature itself."[2] Süssmilch had objected to the idea of a human development of language on the ground that such a proceeding would have required the thought of a philosophically trained mind, such as it would be utterly absurd to imagine primitive man to have been in possession of. Herder points out the shallowness of his argument in very emphatic terms—an argument that, lacking absolutely all sense of historical perspective, would picture primitive man as placed in the same environment and governed by the same conventions as prevailed in the pseudo-philosophical atmosphere of the eighteenth century. Herder gives a most excellent characterization of the spirit of his time in a few sentences which express his profound dissatisfaction with it:

Es ist für mich unbegreiflich, wie man sich so tief in die Schatten, in die dunklen Werkstätten des Kunstmässigen verlieren kann, ohne auch nicht ein mal das weite, helle Licht der uneingekerkerten Natur erkennen zu wollen . . . . Aus den Meisterstücken menschlicher Dichtkunst und Beredsamkeit [sind] Kindereien geworden, an welchen greise Kinder und junge Kinder Phrasen lernen und Regeln klauben. Wir haschen ihre Formalitäten und haben ihren Geist verloren; wir lernen ihre Sprache und fühlen nicht die lebendige Welt ihrer Gedanken. Derselbe Fall ist's mit unserm Urtheilen über das Meisterstück des menschlichen Geistes, die Bildung der Sprache überhaupt. Da soll uns das todte Nachdenken Dinge lehren, die bloss aus dem lebendigen Hauche der Welt, aus dem Geiste der grossen wirksamen Natur den Menschen beseelen, ihn aufrufen und fortbilden konnten. Da sollen die stumpfen, späten Gesetze der Grammatiker das Göttlichste sein, was wir verehren, und vergessen die wahre göttliche Sprachnatur, die sich in ihren Herzen mit dem menschlichen Geiste bildete, so unregelmässig sie auch scheine. Die Sprachbildung ist in die Schatten der Schule gewichen, aus denen sie nichts mehr für die lebendige Welt wirket: drum soll auch nie eine helle Welt gegeben sein, in der die ersten Sprachenbilder leben, fühlen, schaffen, und dichten mussten.[3]

[1] *Op. cit.*, p. 100. [2] *Ibid.*, p. 101. [3] *Ibid.*, pp. 111, 112.

Herder's second natural law carries the development of language one step farther; the first law dealt with the growth of language in the individual, the second is devoted to its development in the family. The law reads: "Man is, according to his nature, a being of the herd, of society: The development of a language is therefore natural, essential, necessary to him."[1] The great physical weakness of the human female as compared with the male, and the utter helplessness of the newborn child, make it absolutely necessary that human beings, even more so than is the case among the animals, form into families, sharing a common abode. The primitive man, more experienced than his mate and offspring, would naturally proceed to teach them that stock of linguistic information which he had himself so laboriously gathered. The child, entirely dependent as he is upon the exertions of his father, would babblingly repeat the sounds uttered in his neighborhood, and in time become inheritor of his parent's entire vocabulary. Arrived at maturity, he would go on enriching the store of linguistic knowledge on the basis of his own experience. In this way the institution of the family becomes an important means for the perpetuation from generation to generation and for the gradual enrichment of language. Moreover, in the very process of teaching, the language becomes more definitely organized, the stock of ideas becomes more and more clearly defined; Herder, indeed, sees in this earliest process of language-instruction the genesis of grammar.

The most interesting portion of the second part of Herder's essay is the discussion of the third natural law, dealing with the rise of nationally distinct languages. Herder formulates his law thus: "Just as the whole race of man could not possibly remain *one* herd, so also it could not retain *one* language. There arises consequently the formation of various national tongues."[2] Herder begins his discussion by clearly pointing out that, in the exact or, as he terms it, "metaphysical" sense of the word, no two persons speak precisely the same language, any more than they are exact physical counterparts. Setting aside, however, such minute individual differences, it can easily be shown that more distinctly

[1] *Op. cit.*, p. 112. [2] *Ibid.*, pp. 123, 124.

marked linguistic groups or dialects would, in the nature of things, form. Every family-group puts its own characteristic stamp upon the inherited linguistic stock; differences of climate work upon the speech-organs, and consequently, Herder supposes, upon the language itself;[1] the preference for different words and turns of expression in different sections of the linguistic field gives rise to dialects. "Original" languages, moreover, being less hampered, according to Herder, by grammatical rules, are more liable to dialectic disintegration than more cultured idioms; although here, too, the most careful modern linguistic research does not unconditionally bear out Herder's presumption. The oft-asserted and oft-repeated statement of the incredibly rapid change of the languages of primitive tribes is founded chiefly on the untrustworthy reports of linguistically inefficient missionaries; many of the extreme statements formerly and even yet current are absurdly untrue. Indeed, the most startling cases of linguistic conservatism are found among certain primitive peoples, such as the Eskimos.

Man, Herder proceeds, with an almost naïve anthropomorphic teleology, is made for all the earth and all the earth for man. Hence we find him at home as well in the regions of eternal snow as under the burning sun of the tropics. As is to be expected, under widely diverse geographical and climatic conditions, the originally homogeneous race of man differentiates into diverse races, while the originally homogeneous speech of man differentiates first into dialects, then, with the lapse of ages, into mutually quite unintelligible languages. Hence is to be explained the bewildering Babel of tongues; as Herder expresses it: "Die Sprache wird ein Proteus auf der runden Oberfläche der Erde."[2] It is to be borne in mind, of course, that the now familiar conception of independent linguistic stocks was in the main a foreign one to Herder; it did not arise until after a lucky fate discovered the relationship of the idiom of ancient India with that of far-distant Greece and Rome. If Herder's view of the gradual

[1] It should be stated here, however, that, contrary to all expectation, anatomical investigation has never succeeded in demonstrating differences of vocal anatomy to be the basis of differences in dialect or language.

[2] *Op. cit.*, p. 127.

differentiation of speech is correct, we expect to find linguistic modifications congruent to geographic differences. How comes it, then, that totally diverse languages are often found spoken side by side? Herder thinks to be able satisfactorily to explain this puzzling condition by the hatred with which neighboring tribes frequently regard each other. Such discord would operate quite as effectively as geographical barriers toward linguistic isolation. The description of the confusion of tongues in Genesis Herder interprets as a characteristically oriental method of presenting this truth.

The fourth and last *Naturgesetz* reads:

> Just as, according to all probability, the human race forms a progressive whole from one origin in one great system; so also all languages, and with them the whole chain of culture.[1]

After a brief résumé of the links in the chain of linguistic development—development in the individual, in the family, and in the nation—Herder most emphatically supports a monogenistic view of language as the most rational. His chief reason for the contention is the evident similarity he finds in the grammatical structure of the various languages—a similarity that he believes to be so great as to preclude all possibility of polygenism. The only serious departure from the common grammatical outlines is found, according to Herder, in the case of Chinese, which however, is but an exception. Herder advances as another argument in favor of linguistic monogenism the almost universal use of the same or very similar alphabets. This universality was more apparent in Herder's time than now, for the Egyptian and various cuneiform records had not as yet been deciphered. Still one is rather surprised to find a man of Herder's stamp so lose sight of the perspective of history as to present so lame an argument. One might have expected him to perceive that in any case the formation of written alphabets must have taken place long after independent languages had developed, and that the wide spread of the so-called Phœnician alphabet was due to several stages of borrowing, to a great extent, within historic times.

The latter part of the essay rapidly summarizes the orthodox

[1] *Op. cit.*, p. 134.

stand taken by Süssmilch and his followers as against the more philosophical and psychologically sounder view of Herder concerning the origin of language. Herder makes bold to call the orthodox view "nonsense" (*Unsinn*), and accuses its supporters of petty anthropomorphism in their conception of God's activity. On the other hand, he claims:

> Der menschliche [Ursprung] zeigt Gott im grössesten Lichte; sein Werk, eine menschliche Seele, durch sich selbst, eine Sprache schaffend und fortschaffend, weil sie sein Werk, eine menschliche Seele ist.[1]

At the very end of the essay we find Herder's own statement of his aim, with which I shall close my analysis of his work as a perfectly good formulation of the spirit to be pursued in investigations of such a character even today:

> Er [i. e., der Verfasser] befliss sich feste Data aus der menschlichen Seele, der menschlichen Organisation, dem Bau aller alten und wilden Sprachen, und der ganzen Haushaltung des menschlichen Geschlechts zu sammlen, und seinen Satz so zu beweisen, wie die festeste philosophische Wahrheit bewiesen werden kann.[2]

It is hardly necesssary to go into any *general* criticism on Herder's prize essay, particularly as various points in Herder's argument have been the subject of critical comment in the course of our analysis. That much of the work is quite antiquated, both in subject-matter and general attitude, is, of course, self-evident; it is rather to be wondered at how much in the essay is still valid, and with what remarkable intuitive power Herder grasped some of the most vital points both in psychology and language. One wishes that we today could be so cocksure of the solution of certain linguistic problems as Herder seems to have been; but, then, that was characteristic in a large measure of the age of rationalism. The philosophers of the eighteenth century, relying very heavily on pure reason unfettered by hard facts, proceeded, with admirable courage, to attack and solve the most obscure and intricate problems in the history of human culture—problems to the solution of which we have now learned to proceed quite timidly. Some of this blind trust in pure reason is apparent in our prize essay; yet Herder attempted, as much as possible, to make use of what linguistic material was at hand in the verification of his theories.

[1] *Op. cit.*, p. 146. [2] *Ibid.*, p. 147.

It is not necessary, either, to go into any analysis of the literary style of Herder's essay, as the important thing in our subject is not Herder's language, but rather his thought. The characteristic qualities of Herder's style are here in evidence as elsewhere; wealth of figurative expression; a lavish use of rhetorical periods, as outwardly indicated by a generous sprinkling of exclamation points, interrogation points, and dashes (it may be noted that the treatise ends with a dash); and a warm, enthusiastic diction, which often carries the author away from the immediate object of discussion. In general, however, the essay is remarkable, at least when considered as a Herder document, for the systematic development of the theme and for clearness of exposition.

It is certainly very strange, and almost incredible, that one who succeeded so well in demonstrating the human origin of language should himself have later been in doubt as to the validity of his conclusions; yet such was the melancholy case with Herder. When Herder wrote the prize essay, during the latter part of his stay in Strassburg (1770), he was still, in the main, in sympathy with the rationalistic advocates of reason, even though the bloodless *Aufklärung* of a Nicolai was not exactly to his taste. Hence we find in the essay a strong aversion for the mystic and supernatural, and a desire to explain all cultural phenomena in the light of human intelligence. In the early part of his Bückeburg residence, however, Herder's ideas underwent a tremendous change. So radical, indeed, was the transformation effected in his general mental attitude that the *Preisschrift* may be conveniently considered as marking the end of a definitely limited period in Herder's life. The mental change referred to was a break with the older standpoint of "enlightenment" (*Aufklärung*), which had on the whole, despite Hamann's influence, dominated Herder's thoughts, if at times equivocally. He now (1771–72), very largely under the influence of the mystically pious Countess of Bückeburg, leaned toward romanticism, and a philosophy and theology that did not seek the final explanation of things in reason. Hence, when the news reached Herder that he had been awarded the prize, he was anything but elated; the

whole spirit and tendency of his essay were now quite distasteful to him, and belonged already for Herder to the dim past. Despite the change in Herder, congratulations on the winning of the prize came in from all sides; "the townspeople," he writes, "regard me as the most celebrated of men because I have now gained the prize."[1] These congratulations, as might well be expected under the circumstances, brought Herder more vexation than satisfaction.

At Easter of the year 1772, Herder's former preceptor, Hamann, who had not corresponded with his disciple since the latter had left Riga, and from whom Herder had in the meanwhile become somewhat estranged, intellectually speaking, wrote a cold and hostile review of the *Ursprung der Sprache* in the *Königsberger Journal.* Though many ideas developed in the essay had been largely inspired by suggestions of Hamann himself, nevertheless Herder's flat denial of the direct agency of God in the invention of language was by no means to the other's taste. The stand taken by Hamann is well summarized by Nevinson: "God might act through nature and the voices of beasts, but from God language, as all else, must come, for in God we live and move and have our being."[2] Herder felt the sting of criticism all the more keenly in that he was now largely in sympathy with Hamann's views, and felt drawn toward his former teacher more powerfully than ever. Through the mediation of their mutual friend, Hartknoch, a reconciliation was effected between the two, Herder recanting the heresies of which he had been guilty. In a second and more favorable review, and in a treatise entitled *The Last Words of the Red-Cross Knight on the Divine or Human Origin of Language*, Hamann clearly shows that the friends of old were friends again. Perhaps nothing can prove more clearly the unhealthy element in the mysticism of Herder's Bückeburg period than his amazing repudiation of the doctrines he had himself so unanswerably demonstrated. For a time he occupied himself with the thought of adding some words of explanation and semi-apology to the essay, published by authority of the Academy in 1772, but nothing came of the plan. Fritz Mauthner,

[1] See Nevinson, *Herder and His Times*, p. 185.

[2] *Ibid.*, p. 196.

in the work already referred to, speaks impatiently of Herder's inconstancy:

> Herder bringt sich um jeden Kredit, wenn er seine Preisschrift schon 1772 (in einem Brief an Hamann) als "Schrift eines Witztölpels" verleugnet; die Denkart dieser Preisschrift könne und solle auf ihn so wenig Einfluss haben, als das Bild, das er jetzt an die Wand nagle. Da ist es denn kein Wunder, wenn Herder in der Folgezeit den lieben Gott wieder um die Erfindung der Sprache bemüht.[1]

Certainly disingenuous is Herder's statement, in the long letter of explanation addressed to Hamann, that after all he had not seriously differed from his preceptor, and that in writing for "an enlightened royal Prussian Academy"[2] he had been forced to put on the mask of the "Leibnitzian æsthetic form."[3] After Herder had freed himself from the mists of Bückeburg mysticism, a reversal in judgment set in in favor of his earlier comparatively rationalistic views, so that, when seventeen years later, in 1788–89, he prepared a second edition of the *Preisschrift*, he found little to change in the text, save in the matter of chastening the wildness of the language. We may then safely look upon our *Preisschrift* as the most important and genuine expression of Herder's views upon the subject of language.

Concerning the influence of Herder's prize essay on subsequent linguistic speculation it is difficult to speak definitely, from the very nature of Herder's work. Herder did not, as we have seen, definitely systematize, nor could his solution of the problem be considered in any way final; his own subsequent vacillation shows, perhaps more clearly than anything else, the unsatisfactory nature of much of the reasoning. Contradictions even of no small significance and lack of clearness in the terms used will have been noticed in the course of our exposition of Herder's essay; the weak points in it, both when judged from the standpoint of Herder's own time and from that of the post-Humboldtian and pre-evolutionary view-point of the sixties, are probably best pointed out by the psychologist and linguistic philosopher, H. Steinthal, in his *Ursprung der Sprache*. Setting aside faults in the essay itself, it is evident that the new vistas of

[1] F. Mauthner, "Zur Sprachwissenschaft" (Vol. II of *Kritik der Sprache*), pp. 47–50.

[2] See Nevinson, *op. cit.*, p. 197. [3] *Ibid.*

linguistic thought opened up by the work of Karl Wilhelm von Humboldt, and the more special labors of Bopp and Grimm, speedily relegated Herder's treatise to the limbo of things that were, so that even as early as the period at which Steinthal and Grimm wrote their works on the origin of language, Herder's *Preisschrift* had already become of chiefly historical interest. The real historic significance, then, of Herder's work would be shown to lie in the general service it rendered by compelling a sounder study of the psychologic and historic elements involved in the investigation of the problem, and perhaps also in the suggestions it gave Humboldt for his far deeper treatment of the same and closely allied themes.

Perhaps the best testimony which could be offered on the subject of Herder's more general influence is the following quotation from Jacob Grimm at the close of his own work on the origin of language:

> Enden kann ich nicht, ohne vorher dem Genius des Mannes zu huldigen, der was ihm an Tiefe der Forschung oder Strenge der Gelehrsamkeit abging, durch sinnvollen Tact, durch reges Gefühl der Wahrheit ersetzend, wie manche andere, auch die schwierige Frage nach der Sprache Ursprung bereits so erledigt hatte, dass seine ertheilte Antwort immer noch zutreffend bleibt, wenn sie gleich mit anderen Gründen, als ihm schon dafür zu Gebote standen, aufzustellen und bestätigen ist.[1]

On his immediate contemporaries the prize essay doubtless made a deep impression. To Goethe, who was just at that time under Herder's personal influence, the author showed the essay while still in manuscript. Goethe had not thought very much about the subject, and was inclined to consider it as somewhat superfluous. "For," he says, "if man was of divine origin, so was language; and, if man must be regarded in the circle of nature, language must also be natural. Still, I read the treatise with great pleasure and to my special edification."[2]

The extent and even existence of Herder's influence on Humboldt, on the other hand, is a disputed question. It is all the more important because practically all the later thought on the philosophy of language (Steinthal, Schleicher, and others) is

[1] Jacob Grimm, *Über den Ursprung der Sprache* (Berlin, 1852), p. 56.

[2] See Nevinson, *op. cit.*, p. 163.

connected quite directly with Humboldt's ideas developed in his *Über das vergleichende Sprachstudium in Beziehung auf die verschiedenen Epochen der Sprachentwickelung*, and still more in the *Einleitung in die Kawisprache: über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluss auf die geistige Entwickelung der Menschengeschichte*. Steinthal, himself an enthusiastic follower and developer of Humboldtian views, most emphatically denies any indebtedness on Humboldt's part to Herder.[1]

Haym, Herder's biographer, on the other hand, just as emphatically asserts the perceptible influence of Herder in Humboldt's writings, and claims that the latter is most decidedly to be considered as standing on his predecessor's shoulders. He says:

> Er [i. e., Humboldt] wiederholt die Gedanken Herder's — er vertieft, er verfeinert, er bestimmt, er klärt sie, er denkt das von jenem gleichsam athemlos Gedachte mit ruhig verweilender Umsicht zum zweiten Male nach und durch.[2]

He goes on to show how, as with Herder, so also with Humboldt, man is "ein singendes Geschöpf, aber Gedanken mit den Tönen verbindend";[3] language is to Humboldt very much as to Herder, "die natürliche Entwickelung einer den Menschen als solchen bezeichnenden Anlage."[4] To Humboldt the chief task of general linguistics is the consideration from a single point of view of the apparently infinite variety of languages, "und durch alle Umwandlungen der Geschichte hindurch dem Gange der geistigen Entwickelung der Menschheit an der Hand der tief in dieselbe verschlungenen, sie von Stufe zu Stufe begleitenden Sprache zu folgen."[5] This is evidently little else than a more satisfactory and scientific formulation of Herder's idea of the gradual growth of language in concomitance with the growth of *Besonnenheit*. On the whole, I should be inclined, in view of the greater probability of the historic continuity of ideas, to side with Haym. A comprehensive statement of the position that Herder occupies in the history of linguistics is given by Lauchert.[6]

[1] H. Steinthal, *Der Ursprung der Sprache* (Berlin, 1858), p. 12.

[2] Haym, *Herder nach seinem Leben und seinen Werken dargestellt*, p. 435.

[3] *Ibid.* [4] *Ibid.* [5] *Ibid.*

[6] F. Lauchert, "Die Anschauungen Herders über den Ursprung der Sprache," *Euphorion*, Vol. I, p. 766.

Es genüge, darauf hingewiesen zu haben, dass die neuere Sprachphilosophie, soweit sie einerseits nicht auf dem Boden des positiven Christentums und der Schöpfungslehre desselben steht, andrerseits aber auch noch nicht auf dem der modernen naturalistisch-materialistischen Weltanschauung, direkt oder indirekt unter Herder's Einfluss steht.

As the last general linguist to discuss language problems from the standpoint that maintained the existence of a wide, impassable gulf between man and the lower animals, and stoutly denied any genetic relationship between animal cries and the rude beginnings of human speech, should perhaps be mentioned Max Müller. Like Herder and Humboldt, he saw in language the distinguishing mark that separated man from the brute world, and was never tired, to the end of his days, of arguing that this possession of language was the death-blow to Darwinism. The idea of the interrelation of language and reason, and of their simultaneous growth, common to Herder and Humboldt, we find pushed to its utmost limit by Max Müller. So impressed was he by this theory of the essential identity of language and reason that his slogan in later days was: "Without reason no language; without language no reason."[1] As is well known, his assertion of this principle brought on a fruitless logomachy with William Dwight Whitney. Despite Max Müller, however, it seems to me that the path for future work on the prime problems, more especially the origin, of language lies in the direction pointed out by evolution. A new element, the careful and scientific study of sound-reflexes in higher animals, must now enter into the discussion. Perhaps this, with a very extended study of *all* the various existing stocks of languages, in order to determine the most *fundamental* properties of language, may assist materially in ultimately rendering our problem more tractable. We should not only try to imagine to what beginnings the present state of language reaches back, but also to reconstruct an ideal picture of the evolution of howls and cries, under the favoring conditions, whatever those were, into less rude forms of audible expression. Perhaps the ends of the two series can be bridged over?

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[1] See, e. g., title-page of M. Müller's *Science of Thought* (New York, 1887).

Editorial Note

Modern Philology 5 (1907), 109–142. [A reprint appeared in: *Historiographia Linguistica* 11 (1984), 355–383]

The following errors in the originally published version have been corrected directly into the text printed here (page references are to the original):
p. 109, l. 5: sont ils (correct: sont-ils)
p. 114, l. 30–31: *connaissances* (18th-century spelling: *connoissances*)
p. 132, l. 32: undfort bilden (correct: und fortbilden)
p. 140, l. 22: when sie (correct: wenn sie)
p. 141, l. 25: Umwandlnngen (correct: Umwandlungen)

A further error to be corrected on p. 67 l. 6 concerns the name of the secretary of the Berlin academy. Sapir erroneously writes his name as Tourney; this should be corrected into *Formey* [= Jean-Henri-Samuel Formey].

Section Two

History, Variety and Setting of Language (1911, 1912)

Introduction: History, Variety and Setting[1] of Language

The two texts included in this section deal with issues of general, descriptive and historical linguistics. Both articles, published by Edward Sapir while still in his mid-twenties, and shortly after his move to Ottawa,[2] are the (slightly) revised version of papers delivered before an audience of anthropologists.[3] They testify to Sapir's increasing mastery of various American Indian languages.

In these two texts we find adumbrated the major themes which Sapir was to elaborate on in his book *Language*,[4] such as: problems of historical relationship

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[1] For this term, see *Language* (New York, 1921), p. 221: "Language has a setting. The people that speak a tongue belong to a race (or a number of races), that is, to a group which is set off by physical characteristics from other groups. Again, language does not exist apart from culture, that is, from the socially inherited assemblage of practices and beliefs that determines the texture of our lives."

[2] On this period in Sapir's career, see Richard J. Preston, "Reflections on Edward Sapir's Anthropology in Canada", *Canadian Review of Sociology and Anthropology* 17 (1980), 367–374; Stephen O. Murray, "The Canadian Winter of Edward Sapir", *Historiographia Linguistica* 8 (1981), 63–68; Hélène Bernier, "Edward Sapir et la recherche anthropologique au Musée du Canada 1910–1925", *Historiographia Linguistica* 11 (1984), 397–412; William N. Fenton, "Sapir as Museologist and Research Director 1910–1925", in *New Perspectives on Language, Culture, and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 2–3 October 1984)*, edited by William Cowan, Michael K. Foster, and Konrad Koerner (Amsterdam/Philadelphia, 1986), 215–240; Regna Darnell, *Edward Sapir: Linguist, Anthropologist, Humanist* (Berkeley, 1990), 34–86.

[3] "The History and Varieties of Human Speech" is based on a lecture delivered on April 1, 1911, at the University of Pennsylvania Museum; "Language and Environment" was read at the December meeting of the American Anthropological Association in 1911.

[4] Readers familiar with Sapir's linguistic writings will note several passages in the 1911 and 1912 papers that are echoed in *Language* (New York, 1921): e.g.,
- "The History and Varieties of Human Speech", p. 46 :: *Language*, pp. 165–166 (the cumulative effect of slight linguistic changes); p. 47 and p. 58 :: *Language*, p. 202 (English plural nouns); p. 48 :: *Language*, p. 163 (historical linguistic relationships); p. 48 and p. 57 :: *Language*, pp. 191–201 (history of the German word for "hand"); pp. 51–52 :: *Language*, pp. 61–64 (grammatical processes); pp. 52–54 :: *Language*, pp. 5–6 (origins of language); pp. 55–56 :: *Language*, pp. 183–204 (phonetic law); p. 57 :: *Language*, p. 28 and p. 186 (Anglo-Saxon phonetic laws affecting infinitive forms); p. 59 :: *Language*, pp. 205–220 (languages influencing each other); p. 59 :: *Language*, p. 212 (presence of a "dull vowel" in Slavic and Ural-Altaic); p. 61 :: *Language*, p. 111 (impossibility to "put" ideas of material content through grammatical suffixes appended to the verb stem); p. 97 :: *Language*, pp. 101–102 and 97–98 (treatment of relational concepts in Latin and Kwakiutl); p. 63 :: *Language*, p. 64 and p. 76 (derivation by final consonant change in English); p. 63 :: *Language*, p. 64 (distinctive functions of pitch accent in English);
- "Language and Environment", p. 228 and pp. 239–240 :: *Language*, p. 234 (relationship between grammatical forms and language and culture); p. 233 :: *Language*, pp. 233–234 (no correlation between grammatical forms and culture); pp. 240–241 :: *Language*, pp. 231–234 (different rhythm of language and culture); pp. 235–236 :: *Language*, pp. 228–229 (Hupa, Yurok and Karok linguistic diversity and cultural unity).

between languages and remote genetic affiliations,[5] the nature of linguistic change, grammatical processes and grammatical techniques as typological parameters, language and its socio-cultural context.[6]

The first text, "The History and Varieties of Speech," is remarkable for its compactness, and for the vast perspectives it unfolds. Sapir starts from the distinction between *origin* and *history* of language (pp. 45–46); the first theme —which he had dealt with in his master's thesis (see section I)— is briefly dismissed, whereas the second forms the central theme of the paper. The history of language constitutes the thematic convergence point for a threefold analysis:

(a) A study of how the linguist builds up knowledge about the past; here Sapir distinguishes between a philological (documentary) approach and a reconstructive approach,[7] the latter being subdivided into internal and external (or comparative) reconstruction;

(b) The analysis of what is constant and what is variable in human language; Sapir discusses a number of universal conditions or constraints on language, which properly constitute the nature of language, viz. (*i*) vocal symbolization, (*ii*) the use made of a limited set of vocalic and consonantal segments, (*iii*) the overall presence of a number of grammatical processes, and the basic distinction between denominating and predicating terms (p. 51). Within the range of these constraints, a high amount of variation remains possible, and can indeed be observed world-wide.

(c) The nature of linguistic change; this section constitutes the central part of Sapir's article, and what Sapir offers us here, is a synoptic treatment of historical

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[5] On the topic of (distant) genetic relationships in Sapir's work, see: Victor Golla, "Sapir, Kroeber and North American Linguistic Classification", in *New Perspectives in Language, Culture, and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 October 1984)*, edited by William Cowan, Michael K. Foster, and Konrad Koerner (Amsterdam/Philadelphia, 1986), 17–40; Michael E. Krauss, "Edward Sapir and Athabaskan Linguistics, with Preliminary Annotated Bibliography of Sapir's Work on Athabaskan and Na-Dene", *ibid.*, 147–190; Ives Goddard, "Sapir's Comparative Method", *ibid.*, 191–214; Marianne Mithun, "Typology and Deep Genetic Relations in North America", in *Reconstructing Languages and Cultures*, edited by Edgar C. Polomé and Werner Winter (Berlin/New York, 1992), 91–108; Thomas C. Smith Stark, "El método de Sapir para establecer relaciones genéticas remotas", in *Reflexiones lingüísticas y literarias*, edited by Rebeca Barriga Villanueva and Josefina García Fajardo (México, 1992), 17–42; Alan S. Kaye, "Distant Genetic Relationship and Edward Sapir", *Semiotica* 79 (1993), 273–300; Alexis Manaster Ramer, "Sapir's Classifications: Coahuiltecan" and "Sapir's Classifications: Haida and other Na-Dene Languages", *Anthropological Linguistics* 38 (1996), 1–38 and 179–215; Regna Darnell, "Indo-European Methodology, Bloomfield's Central Algonquian, and Sapir's Distant Genetic Relationships", in *The Emergence of the Modern Language Sciences. Studies on the transition from historical-comparative to structural linguistics in honour of E.F.K. Koerner*, vol. 2: *Methodological Perspectives and Applications*, edited by Sheila Embleton, John E. Joseph and Hans-Josef Niederehe (Amsterdam/Philadelphia, 1999), 3–16.

[6] See *Language* (New York, 1921), chapters VII, VIII, and IX (historical relationships, broad genetic affiliations; linguistic change and phonetic law), IV, V and VI (grammatical processes; grammatical concepts and techniques; types of linguistic structure), X (language, race, and culture).

[7] It is interesting to note that Sapir makes mention of the method of "relative chronology" (p. 47), which had its origin in diachronic work by Romance scholars, having been used first by Wilhelm Meyer-Lübke in his *Grammatik der romanischen Sprachen*, vol. I: *Romanische Lautlehre* (Leipzig, 1890) and in his *Historische Grammatik der französischen Sprache* (Heidelberg, 1908), and later by Elise Richter, *Beiträge zur Geschichte der Romanismen*, vol. I: *Chronologische Phonetik des Französischen bis zum Ende des 18. Jahrhunderts* (Halle, 1934) and Max Křepinský, *Romanica* (Praha, 1952).

linguistics. He first discusses the general explanatory principles for change in language (transmission of language from one generation to another; internal linguistic change, i.e. modifications of linguistic structures from inside; external influences), while focusing on the interplay between phonetic change and analogy, the two basic principles advocated by the Neogrammarians.

Sapir's view of linguistic change is a product-oriented view, not a rule-oriented view: change is brought about by deviations, modifications in speech; through social imitation (and selection) the various individual realizations are then calibrated or uniformized.[8]

In Sapir's discussion of (internal) change, the Neogrammarian idea of phonetic change as the principal factor in language change is maintained, but one also has to note Sapir's insistence on the intertwining of phonology and grammar; on the one hand, phonetic change has an impact on the grammatical type or character of a language, and, on the other hand, morphological analogy is seen as preserving (or reorganizing) linguistic structures affected by the destructive action of phonetic change (p. 58). Sapir also points to the role of analogy in language learning, thus anticipating Bloomfield's view on analogy as the basic principle of synchronic productivity.[9]

In discussing historical change, Sapir touches upon one type of linguistic variety, viz. variation on the time axis. Geographical variation (and its counterpart, areal diffusion or uniformization) constitutes a second type. This brings Sapir to raise, at the end of his paper, the problem of the classification of languages —a meeting-ground for historical linguistics and general linguistics. Sapir shows the deficiencies of a genetic classification,[10] and then examines the possibility of a "psychological" classification. Contrary to the "polythetical" stand he was to adopt in his *Language*,[11] Sapir proceeds in an analytical way, discussing

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[8] This is the Neogrammarian view as it is exposed in the classic textbook of Hermann Paul, *Prinzipien der Sprachgeschichte* (Halle, 1880; later editions have "*Prinzipien*").

[9] See Leonard Bloomfield, *Language* (New York, 1933), p. 275: "A grammatical pattern (construction, or substitution) is often called an *analogy*. A regular analogy permits a speaker to utter forms which he has not heard; we say that he utters them *on the analogy* of similar forms which he has heard."

[10] See p. 60: "the linguistic stocks we thus get as our largest units of speech are too numerous to serve as the simplest possible reduction of the linguistic material to be classified." The term "stock" as used by Sapir to designate a higher-level grouping of languages, above the more narrow "family" relationship, as he later also speaks of "stock groups." With respect to the American Indian field, Sapir seems to adopt Powell's classification into "fifty or more distinct linguistic stocks" (see John Wesley Powell, "Indian Linguistic Families North of Mexico", *Bureau of American Ethnology, Seventh Annual Report* 1885–86, pp. 7–191; for Sapir's later drastic reduction of this number, see "A Bird's-eye View of American Languages North of Mexico", *Science* 34 (1911), 408 [reprinted in *The Collected Works of Edward Sapir*, vol. V, pp. 93–94] and "Classification of American Languages", *Encyclopaedia Britannica* 14th edition (1929), vol. 5, 136–141 [reprinted in *The Collected Works of Edward Sapir*, vol. V, pp. 95–104]. On Sapir's six phylum classification, see Harold Driver, "Edward Sapir's Six-Unit Classification of American Indian Languages: The Search for Time Perspective", in *Essays in the History of Western Linguistics*, edited by Timothy Hymes and Frank Parker (Lanham, 1983), 202–244; Michael K. Foster, "The Impact of Sapir's Six-Phylum Linguistic Scheme on Speculations about North American Indian Culture History: a Bibliographic Essay", *Anthropological Linguistics* 30 (1988), 55–67.

[11] See *Language* (New York, 1921), pp. 144–156.

(*i*) a psychological classification based on the expression of logical contents,[12] a procedure which he finds unapplicable in typological practice;[13]
(*ii*) a formal/psychological classification based on the relationship between forms, contents and processes, which he also considers to be not viable;[14]
(*iii*) a classification based on the *degree of unity which the grammatical processes bring about between the stem and the increments which express relational concepts*.[15]

Adopting the latter criterion, Sapir proceeds to a classification into three main types:[16] the isolating type (with Chinese as the classical example), the agglutinative type (exemplified by Turkish),[17] and the inflective (= inflectional) type. As pointed out by Sapir, the term "polysynthetic," often used to designate a fourth type, in fact refers to the content of a morphological system, and does not stand on a par with the terms "isolating," "agglutinative" and "inflective". Further,

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[12] As is clear from the terminology used ("subject-matter or content", "mere form pure and simple") Sapir is thinking here of Steinthal's psychologically based classification of language types: see Heymann Steinthal, *Die Classifikation der Sprachen, dargestellt als die Entwicklung der Sprachidee* (Berlin, 1850) and *Charakteristik der hauptsächlichsten Typen des Sprachbaus* (Berlin, 1869).

[13] Sapir thus rejects the typological viability of linguistic characterology as practised by Neo-Humboldtian scholars such as Steinthal; see p. 62: "If, now, it has been shown that no necessary correlation exists between particular logical concepts and the formal method of their grammatical rendering, and if, furthermore, there can not even be shown to be a hard and fast line in grammatical treatment between concepts of a derivational and concepts of a more definitely relational character, what becomes of the logical category *per se* as a criterion of linguistic classification on the basis of form ? Evidently it fails us. Of however great psychological interest it might be to map out the distribution in various linguistic stocks of logical concepts receiving formal treatment, it is clear that no satisfactory formal classification of linguistic types would result from such a mapping."

[14] See p. 64; as shown by Sapir, the correlation between forms, contents and grammatical processes is never a one-to-one correlation.

[15] This is the criterion which Sapir was going to label "technique" in his *Language* (New York, 1921); however, in his 1921 book (pp. 143–144, and p. 153) Sapir does no longer use "inflective" on a par with "isolating" and "agglutinative," and instead operates with "fusional" and "symbolic." Note that the formulation of the criterion in the 1911 article blurs the distinction (made in 1921) between "technique" and "degree of synthesis." On the basic concepts of Sapir's typology (of languages, but also of cultures), see: Stefano Arduini, *Fra cultura e linguaggio. Un'interpretazione della tipologia di Edward Sapir* (dissertation Pisa, 1984) and "Lenguaje, tipología y cultura. Edward Sapir", *Estudios de Lingüística de la Universidad de Alicante* 5 (1988–89), 275–290; Pierre Swiggers, "'Synchrony' and 'Diachrony' in Sapir's *Language* (1921)", *Neuphilologische Mitteilungen* 94 (1993), 313–322; Jesús Pena, "La tipología morfológica de Sapir", in *Scripta in memoriam Manuel Taboada*, edited by Manuel Casado Velarde, Antonio Freire Llamas, José E. López Pereira and José I. Pascual (A Coruña, 1996), 165–177; María Xosé Fernández Casas, "El alcance de la tipología lingüística en la obra de Edward Sapir", *Verba* 27 (2000), 249–287, and "Qué entendemos por 'tipo lingüístico'? El uso polisémico de este concepto en la obra de Edward Sapir (1884–1939)", *Boletín de la Sociedad Española de Historiografía Lingüística* 3 (2002), 79–88, and also her monograph *Edward Sapir en la lingüística actual. Líneas de continuidad en la historia de la lingüística* (Verba, Anexo 54) (Santiago de Compostela, 2004), pp. 67–120.

[16] In his book *Language* (New York, 1921) Sapir offers a more qualified and refined classification of language types (see the table of linguistic types and the subsequent comments there, pp. 149–156).

[17] The examples from Chinese and Turkish are taken from Franz Nikolaus Finck's book *Die Haupttypen des Sprachbaus* (Leipzig, 1910). Finck's name is misspelled ("Fisk") in the version published in the *Popular Science Monthly*, but not in the version reprinted in the 1912 *Annual Report* of the Smithsonian Institution.

Sapir warns his reader against correlations established between linguistic types and stages in historical (and cultural or intellectual)[18] development.

In the article "Language and Environment," based on a paper read in December 1911, Sapir discusses a topic which Franz Boas had dealt with that same year in an article devoted to the impact of the environment on physical and social characteristics, with special reference to the situation of immigrant groups in the United States,[19] as well as in his "Introduction" to the first volume of the *Handbook of American Indian Languages*.[20] In his discussion of the relationship between language and environment, Sapir displays his knowledge of the Indo-European and the American Indian field (there are also sporadic references to African and Melanesian languages). The wide scope of Sapir's investigation of the problem —which may have been triggered by the type of audience before which the paper was read—, as well as the specific linguistic vantage point were to characterize much of Sapir's "anthropolinguistic" writings in the 1910s, in contrast to his earlier anthropological publications, focused on the Amerindian context, and to his later writings, which testify to a shift towards the study of symbolism and of the relationship between society and personality.

Although it was published in an anthropological journal, "Language and Environment" is a paper that belongs with Sapir's linguistic publications; its inclusion in this volume of *The Collected Works of Edward Sapir* is therefore fully justified. As a matter of fact, not only does Sapir discuss the issue of possible linguistic correlates of the sociocultural environment, he also displays in this paper his acquaintance with data from various languages and language groups, such as Chinook, Eskimo, Haida, Hupa, Iroquois, Karok, Kwakiutl, Maidu, Nahuatl, Nootka, Paiute, Salish, Siouan, Takelma, Tewa, Tlingit, Yana, Yurok, as well as Melanesian, Malayan, Mon-Khmer, Chinese, Caucasian languages, Semitic languages, Hottentot, Ewe, and various European languages (Danish, French, English, Hungarian, Latvian, Portuguese). The central part of the paper

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[18] Such correlations had been posited, e.g., by August Schleicher [1821–1868] and the school of "anthropological linguistics," and, shortly before the publication of Sapir's article, by the Russian linguist Nikolaj Marr [1864–1934].

[19] Franz Boas, "Instability of Human Types", in *Papers on Inter-racial Problems Communicated to the First Universal Races Congress Held at the University of London, July 26–29, 1911* (ed. Gustav Spiller, Boston, 1911), pp. 99–103; see also *Changes in Bodily Form of Descendants of Immigrants* (Senate Document 208, 61st Congress, Second session, Washington, 1911; reprinted New York, 1921) and "Changes in the Bodily Form of Descendants of Immigrants", *American Anthropologist* n.s. 14 (1912), 530–562 (German version in *Zeitschrift für Ethnologie* 45 (1913), 1–22).

[20] Franz Boas, "Introduction", in *Handbook of American Indian Languages*, Part 1 (Bulletin 40, Part 1 of the Bureau of American Ethnology, Washington, 1911), pp. 1–83. The influence of Boas on Sapir in this [illegible] appears not only from the general topic of the paper, but also from the use of terms such as "psychological categories of thought" (p. 236), "modes of thought" (as reflected in a linguistic morphology) (p. 236), "stock of concepts" (p. 236) and "mental stock" (p. 236).

contains much typological information supplementing that given in the "History and Varieties" article[21] of 1911, and anticipating the comprehensive treatment in *Language*.[22]

The prime importance of "Language and Environment" lies in its methodological contribution, which is threefold.

First, Sapir clarifies the notion of "environment," which normally should be limited to what lies outside the will of man, but which in the present discussion is used to include physical environment and social (cultural) environment. As Sapir points out, the physical environment always exerts its impact through the social prism, which is made up of needs and interests[23] affecting groups of individuals. Strictly speaking, the environment cannot influence groups of individuals: it acts through social forces, and these may be subject to changes caused by the environment (pp. 226–227).

In the second place, Sapir makes clear that in the study of the intricate relationship between language[24] and environment, it is essential to distinguish within language the lexical content side, the phonetic system, and grammatical form. It is especially at the level of the (specialized) lexical content that inferences (as to physical[25] and cultural[26] environment) can be drawn and indeed have been drawn (as can be seen from the published record in the field of "linguistic archeology"[27]). It is also the make-up of the vocabulary of a language that allows, to a certain extent, to establish correlations between the mind of primitive peoples and the primitive nature of their language, or better lexicon (as a set of context-bound words, characterised by a strong "descriptive" orientation; see p. 231). A further elaboration of diachronic insights to be derived from the character of a vocabulary can be found in Sapir's *Time Perspective in Aboriginal Culture*.[28]

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[21] Compare p. 242 the remarks on English with "The History and Varieties of Human Speech", p. 57 and p. 67.

[22] *Language* (New York, 1921), chapters IV, V and VI.

[23] See p. 226 and pp. 228–229.

[24] Language is defined as a "complex of symbols" (p. 227).

[25] See p. 229.

[26] See p. 232–233.

[27] See p. 232, where Sapir uses the term "linguistic archeology" with reference to work on Indo-European language and culture (e.g., O. Schrader's work) and to research perspectives for the American Indian field. For this type of study, the term "linguistic paleontology" has also been used: see Yakov Malkiel, "Linguistic Paleontology (Geology, Archeology)?", *Romance Philology* 28 (1975), p. 600, and Richard A. Diebold, "Paleontology, linguistic", in The *Encyclopedia of Language and Linguistics* (Oxford, 1994), vol. 6, pp. 2906–2913.

[28] E. Sapir, *Time Perspective in Aboriginal Culture: A Study in Method* (Ottawa, 1916) [reprinted in *The Collected Works of Edward Sapir*, vol. IV, pp. 31–119].

The third methodological contribution of the paper is a lesson of caution. In line with Boas's reticent statement on possible correlations between language, race and culture, Sapir warns us against premature generalizations[29] concerning the relationship between language and environment. As Sapir points out, no strong correlations hold between phonetic form and environment,[30] nor between grammatical form[31] and environment. Whereas some kind of "association" may be postulated, with due reservations, for "some primitive stage" (p. 240) of a linguistic community, the history of languages and cultures[32] is not parallel, since language and culture have a different evolutionary rhythm, linguistic form being extremely conservative. "One necessary consequence of this is that the forms of language will in course of time cease to symbolize those of culture, and this is our main thesis" (p. 241). In addition, cultural phenomena are much more liable to diffusion and to (conscious) adoption or borrowing, since they answer immediate needs. The methodological conclusion to be drawn from this is that, historically speaking, there is a split[33] of linguistic form[34] and culture (p. 241), and, geographically and typologically speaking, there is no correlation[35] between morphological system and environment (p. 237–238): morphological similarity can be observed in extremely diverse environments, and, conversely, within the same physical and cultural environment, we often find languages with widely diverging grammatical forms.[36]

Pierre Swiggers

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[29] See the opening sentence of the paper and also p. 230.

[30] As examples Sapir refers to the scattered distribution of pitch accent and nasal vowels in the world's languages.

[31] With "grammatical form" Sapir means morphology and syntax; morphology is defined as dealing with grammatical categories and the formal structure of words (p. 228; on p. 236 morphology is defined as comprising grammatical categories and the formal methods of expressing categories). While syntax is defined as the formal methods for combinations.

[32] It is interesting to note that Sapir also speaks of the "form(s) of culture" (p. 241).

[33] Sapir presents this as a "hypothetical explanation" for the failure to causally correlate environment and language; the metaphor he uses is that of two men starting on a journey in the same general direction but diverging as time goes on (p. 242).

[34] Sapir also speaks of the "formal groundwork" of language (p. 236 a. 241).

[35] Except for those cases where there is grammatical signalling of cultural interests or of phenomena in the physical environment; however, as Sapir shows, we are then dealing with the [illegible] of grammatical forms [illegible] with grammatical forms *as such*.

[36] See also *Language* (New York, 1921), p. 227–231.

THE HISTORY AND VARIETIES OF HUMAN SPEECH[1]

By Dr. EDWARD SAPIR

THE CANADIAN GEOLOGICAL SURVEY

PERHAPS no single feature so markedly sets off man from the rest of the animal world as the gift of speech, which he alone possesses. No community of normal human beings, be their advance in culture ever so slight, has yet been found, or is ever likely to be found, who do not communicate among themselves by means of a complex system of sound symbols; in other words, who do not make use of a definitely organized spoken language. It is indeed one of the paradoxes of linguistic science that some of the most complexly organized languages are spoken by so-called primitive peoples, while, on the other hand, not a few languages of relatively simple structure are found among peoples of considerable advance in culture. Relatively to the modern inhabitants of England, to cite but one instance out of an indefinitely large number, the Eskimos must be considered as rather limited in cultural development. Yet there is just as little doubt that in complexity of form the Eskimo language goes far beyond English. I wish merely to indicate that, however much we may indulge in speaking of primitive man, of a primitive language in the true sense of the word we find nowhere a trace. It is true that many of the lower animals, for example birds, communicate by means of various cries, yet no one will seriously maintain that such cries are comparable to the conventional words of present-day human speech; at best they may be compared to some of our interjections, which, however, falling outside the regular morphologic and syntactic frame of speech, are least typical of the language of human beings. We can thus safely make the absolute statement that language is typical of all human communities of to-day, and of such previous times as we have historical knowledge of, and that language, aside from reflex cries, is just as untypical of all non-human forms of animal life. Like all other forms of human activity, language must have its history.

Much has been thought and written about the history of language. Under this term may be included two more or less distinct lines of inquiry. One may either trace the changes undergone by a particular language or group of languages for as long a period as the evidence at hand allows, or one may attempt to pass beyond the limits of historically recorded or reconstructed speech, to reconstruct the ultimate

[1] Lecture delivered at the University of Pennsylvania Museum, April 1, 1911.

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origin of speech in general, and to connect these remote origins by means of reconstructed lines of development with historically attested forms of speech. Superficially the latter sort of inquiry is similar in spirit to the labors of the evolutionary biologist, for in both apparently heterogeneous masses of material are, by direct chronologic testimony, inference, analogy and speculation, reduced to an orderly historical sequence. As a matter of fact, however, the reconstruction of linguistic origins and earliest lines of development is totally different in kind from biological reconstruction, as we shall see presently.

Taking up the history of language in the sense in which it was first defined, we find that there are two methods by which we can follow the gradual changes that a language has undergone. The first and most obvious method is to study the literary remains of the various periods of the language of which we have record. It will then be found that not only the vocabulary, but just as well the phonetics, word morphology, and syntactic structure of the language tend to change from one period to another. These changes are always very gradual and, within a given period of relatively short duration, slight or even imperceptible in amount. Nevertheless, the cumulative effect of these slight linguistic changes is, with the lapse of time, so great that the form of speech current at a given time, when directly compared with the form of speech of the same language current at a considerably earlier time, is found to differ from the latter much as it might from a foreign language. It is true that the rate of change has been found to be more rapid at some periods of a language than at others, but it nevertheless always remains true that the changes themselves are not violent and sudden, but gradual in character. The documentary study of language history is of course the most valuable and, on the whole, the most satisfactory. It should not be denied, however, that there are dangers in its use. Literary monuments do not always accurately reflect the language of the period; moreover, orthographic conservatism hides the phonetic changes that are constantly taking place. Thus, there is no doubt that the amount of change that English has undergone from the time of Shakespeare to the present is far greater than a comparison of present-day with Elizabethan orthography would lead the layman to suppose, so much so that I am quite convinced the great dramatist would have no little difficulty in making himself understood in Stratford-on-Avon to-day. For some languages a considerable amount of documentary historical material is available; thus, the literary monuments that enable us to study the history of the English language succeed each other in a practically uninterrupted series from the eighth century A.D. to the present time, while the course of development of Greek in its various dialects can be more or less accurately followed from the ninth century B.C., a conservative date for the Homeric poems, to the present time.

For some, in fact for most languages, however, literary monuments are either not forthcoming at all or else are restricted to a single period of short duration. At first sight it would seem that the scientific study of such languages would have to be limited to purely descriptive rather than historical data. To a considerable extent this is necessarily true, yet an intensive study will always yield at least some, oftentimes a great deal of, information of a historical character. This historical reconstruction on the basis of purely descriptive data may proceed in two ways. It is obvious that the various phonetic and grammatical features of a language at any given time are of unequal antiquity, for they are the resultants of changes that have taken place at very different periods; hence it is reasonable to suppose that internal evidence would, at least within modest limits, enable one to reconstruct the relative chronology of the language. Naturally one must proceed very cautiously in reconstructing by means of internal evidence, but it is oftentimes surprising how much the careful and methodically schooled student can accomplish in this way. Generally speaking, linguistic features that are irregular in character may be considered as relatively archaic, for they are in the nature of survivals of features at one time more widely spread. Not infrequently an inference based on internal evidence can be corroborated by direct historical testimony. One example will suffice here. We have in English a mere sprinkling of noun plurals in *-en*, such as *brethren* and *oxen*. One may surmise that nouns such as these are but the last survivals of a type formerly existing in greater abundance, and indeed a study of Old English or Anglo-Saxon demonstrates that noun plurals in *-en* were originally found in great number but were later almost entirely replaced by plurals in *-s*. There is, however, a far more powerful method of reconstructing linguistic history from descriptive data than internal evidence. This is the comparison of genetically related languages.

In making a survey of the spoken languages of the world, we soon find that though they differ from each other, they do so in quite varying degrees. In some cases the differences are not great enough to prevent the speakers of the two languages from understanding each other with a fair degree of ease, under which circumstances we are apt to speak of the two forms of speech as dialects of a single language; in other cases the two languages are not mutually intelligible, but, as in the case of English and German, present so many similarities of detail that a belief in their common origin seems warranted and indeed necessary; in still other cases the two languages are at first glance not at all similar, but reveal on a closer study so many fundamental traits in common that there seems just ground for suspecting a common origin. If other languages can be found which serve to lessen the

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chasm between the two, and particularly if it is possible to compare them in the form in which they existed in earlier periods, this suspicion of a common origin may be raised to a practical certainty. Thus, direct comparison of Russian and German would certainly yield enough lexical and grammatical similarities to justify one in suspecting them to have diverged from a common source; the proof of such genetic relationship, however, can not be considered quite satisfactory until the oldest forms of German speech and Germanic speech generally have been compared with the oldest forms of Slavic speech and until both of these have been further compared with other forms of speech, such as Latin and Greek, that there is reason to believe they are genetically related to. When such extensive, not infrequently difficult, comparisons have been effected, complete evidence may often be obtained of what in the first instance would have been merely suspected. If all the forms of speech that can be shown to be genetically related are taken together and carefully compared among themselves, it is obvious that much information will be inferred as to their earlier undocumented history; in favorable cases much of the hypothetical form of speech from which the available forms have diverged may be reconstructed with a considerable degree of certainty or plausibility. If under the term history of English we include not only documented but such reconstructed history as has been referred to, we can say that at least in main outline it is possible to trace the development of our language back from the present day to a period antedating at any rate 1500 B.C. It is important to note that, though the English of to-day bears only a faint resemblance to the hypothetical reconstructed Indogermanic speech of say 1500 B.C., there could never have been a moment from that time to the present when the continuity of the language was broken. From our present standpoint that bygone speech of 1500 B.C. was as much English as it was Greek or Sanskrit. The history of the modern English words *foot* and its plural *feet* will illustrate both the vast difference between the two forms of speech at either end of the series and the gradual character of the changes that have taken place within the series. Without here going into the actual evidence on which the reconstructions are based, I shall merely list the various forms which each word has had in the course of its history. Starting, then, with *foot—feet,* and gradually going back in time, we have *fūt—fīt, fōt—fēt, fōt—fēte, fōt—fōte, fōt—fōti, fōt—fōti, fōt—fōtir, fōt—fōtiz, fōt—fōtis, fōt—fōtes, fōd—fōdes,* and finally *pōd—pōdes,* beyond which our evidence does not allow us to go; the last forms find their reflex in Sanskrit *pād—pādas.*

All languages that can be shown to be genetically related, that is, to have sprung from a common source, form a historic unit to which the term linguistic stock or linguistic family is applied. If, now, we

were in a position to prove that all known forms of speech could be classified into a single linguistic stock, the apparent parallel above referred to between linguistic and biological reconstruction would be a genuine one. As it is, we must content ourselves with operating with distinct and, as far as we can tell, genetically unrelated linguistic stocks. The documentary evidence and the reconstructive evidence gained by comparison enable us to reduce the bewildering mass of known languages to a far smaller number of such larger stock groups, yet the absolute number of these latter groups still remains disquietingly large. The distribution of linguistic stocks presents great irregularities. In Europe there are only three such represented: the Indogermanic or Aryan, which embraces nearly all the better known languages of the continent; the Ural-Altaic, the best known representatives of which are Finnish, Hungarian and Turkish; and the Basque of southwestern France and northern Spain. On the other hand, that part of aboriginal North America which lies north of Mexico alone embraces fifty or more distinct linguistic stocks. Some stocks, as, for instance, the Indogermanic just referred to and the Algonkin of North America, are spread over vast areas and include many peoples or tribes of varying cultures; others, such as the Basque and many of the aboriginal stocks of California, occupy surprisingly small territories. It is possible to adopt one of two attitudes towards this phenomenon of the multiplicity of the largest known genetic speech aggregates. On the one hand one may assume that the disintegrating effects of gradual linguistic change have in many cases produced such widely differing forms of speech as to make their comparison for reconstructive purposes of no avail, in other words, that what appear to us to-day to be independent linguistic stocks appear such not because they are in fact historically unrelated, but merely because the evidence of such historical connection has been so obscured by time as to be practically lost. On the other hand, one may prefer to see in the existence of mutually independent linguistic stocks evidence of the independent beginnings and development of human speech at different times and places in the course of the remote history of mankind; there is every reason to believe that in a similar manner many religious concepts and other forms of human thought and activity found widely distributed in time and place have had multiple origins, yet more or less parallel developments. It is naturally fruitless to attempt to decide between the monogenetic and polygenetic standpoints here briefly outlined. All that a conservative student will care to do is to shrug his shoulders and to say, "Thus far we can go and no further." It should be said, however, that more intensive study of linguistic data is from time to time connecting stocks that had hitherto been looked upon as unrelated. Yet it can hardly be expected that serious research will ever succeed in reducing the present Babel to a pristine unity.

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Although we can not demonstrate a genetic unity of all forms of human speech, it is interesting to observe that there are several fundamental traits that all languages have in common. Perhaps these fundamental similarities are worthy of greater attention than they generally receive and may be thought by many to possess a high degree of significance. First of all, we find that in every known language use is made of exactly the same organic apparatus for the production of speech, that is, the glottal passage in the larynx, the nasal passages, the tongue, the hard and soft palate, the teeth and the lips. The fact that we are accustomed to consider all speech as self-evidently dependent on these organs should not blind us to the importance of the association. There is, after all, no *à priori* reason why the communication of ideas should be primarily through sound symbols produced by the apparatus just defined; it is conceivable that a system of sound symbols of noises produced by the hands and feet might have been developed for the same purpose. As a matter of fact, there are many systems of thought transference or language in the widest sense of the word, as a moment's thought will show, that are independent of the use of the ordinary speech apparatus. The use of writing will occur to every one as the most striking example among ourselves. Among primitive peoples we may instance, to cite only a couple of examples of such subsidiary forms of language, the gesture language of the Plains Indians of North America and the very highly developed drum language of several African tribes. From our present point of view it is significant to note that these and other such non-spoken languages are either, as in the case of practically all systems of writing, themselves more or less dependent on a phonetic system, that is, speech in the ordinary sense of the word, or else are merely auxiliary systems intended to replace speech only under very special circumstances. The fact then remains that the primary and universal method of thought transference among human beings is *via* a special articulating set of organs. Much loose talk has been expended by certain ethnologists on the relatively important place that gesture occupies in the languages of primitive peoples, and it has even been asserted that several so-called primitive languages are unintelligible without the use of gesture. The truth, however, is doubtless that the use of gesture is associated not with primitiveness, but rather with temperament. The Russian Jew and the Italian, for instance, non-primitive as they are, make a far more liberal use of gestures accompanying speech than any of the aborigines of North America.

If we examine in a large way the structure of any given language, we find that it is further characterized by the use of a definite phonetic system, that is, the sounds made use of in its words are reducible to a limited number of consonants and vowels. It does not seem to be true,

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certain contradicting statements notwithstanding, that languages are to be found in which this phonetic definiteness is lacking and in which individual variation of pronunciation takes place practically without limit. It is of course freely granted that a certain amount of sound variation exists in every language, but it is important to note that such variation is always very limited in range and always takes place about a well-defined center. All known forms of speech, then, operate with a definite apparatus of sounds; statements to the contrary will in most cases be found to rest either on a faulty perception on the part of the recorder of sounds unfamiliar to his ear or on his ignorance of regular sound processes peculiar to the language. Naturally the actual phonetic systems found in various languages, however much they may resemble each other in this fundamental trait of definiteness, differ greatly in content, that is in the sounds actually employed or neglected. This is inevitable, for the vast number of possible and indeed existing speech sounds makes an unconscious selection necessary. Even so, however, it is at least noteworthy with what persistency such simple vowel sounds as *a* and *i* and such consonants as *n* and *s* occur in all parts of the world.

Even more than in their phonetic systems languages are found to differ in their morphologies or grammatical structures. Yet also in this matter of grammatical structure a survey from a broad point of view discloses the fact that there are certain deep-lying similarities, very general and even vague in character, yet significant. To begin with, we find that each language is characterized by a definite and, however complex, yet strictly delimited grammatical system. Some languages exhibit a specific type of morphology with greater clearness or consistency than others, while some teem with irregularities; yet in every case the structure tends to be of a definite and consistently carried out type, the grammatical processes employed are quite limited in number and nearly always clearly developed, and the logical categories that are selected for grammatical treatment are of a definite sort and number and expressed in a limited, however large, number of grammatical elements. In regard to the actual content of the various morphologies, we find, as already indicated, vast differences, yet here again it is important to note with what persistence certain fundamental logical categories are reflected in the grammatical systems of practically all languages. Chief among these may be considered the clear-cut distinction everywhere made between denominating and predicating terms, that is between subject and predicate, or, roughly speaking, between substantive and verb. This does not necessarily imply that we have in all cases to deal with an actual difference in phonetic form between noun and verb, though as a matter of fact such differences are generally found, but simply that the structure of the sentence is such as to show

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clearly that one member of it is felt by the speaker and hearer to have a purely denominating office, another a purely predicating one. It may be objected that in Chinese, for instance, there is no formal distinction made between noun and verb. True, but the logical distinction of subject and predicate is reflected in the form of the Chinese sentence, inasmuch as the subject regularly precedes the predicate; thus, while the same word *may* be either noun or verb, in any particular sentence it necessarily *is* definitely one and not the other. Other fundamental logical categories will, on a more complete survey, be found to be subject to grammatical treatment in all or nearly all languages, but this is not the place to be anything but merely suggestive. Suffice it to remark on the wide-spread systematizing of personal relations; the wide-spread development of ideas of tense, number and syntactic case relations; and the clear grammatical expression everywhere or nearly everywhere given to the largely emotional distinction of declarative, interrogative and imperative modes.

Granted that there are certain general fundamental traits of similarity in all known languages, the problem arises of how to explain these similarities. Are they to be explained historically, as survivals of features deep-rooted in an earliest form of human speech that, despite the enormous differentiation of language that the lapse of ages has wrought, have held their own to the present day, or are they to be explained psychologically as due to the existence of inherent human mental characteristics that abide regardless of time and race? If the latter standpoint be preferred, we should be dealing with a phenomenon of parallel development. It is of course impossible to decide categorically between the two explanations that have been offered, though doubtless the majority of students would incline to the psychological rather than to the historical method. At any rate, it is clear that we can not strictly infer a monogenetic theory of speech from the fundamental traits of similarity that all forms of speech exhibit. Yet even though these are of psychologic rather than historic interest, it is important to have demonstrated the existence of a common psychological substratum, or perhaps we had better say framework, which is more or less clearly evident in all languages. This very substratum or framework gives the scientific study of language a coherence and unity quite regardless of any considerations of genetic relationship of languages.

In spite of the fact that, as we have seen, no tangible evidence can be brought to bear on the ultimate origin or origins of speech, many attempts have been made, particularly in the first half of the nineteenth century, when it was more common for historical and philosophical problems of extreme difficulty to be attacked with alacrity, to point out the way in which human speech originated or at least might have originated. From the very nature of the case, these attempts could not but

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be deductive in method; hence, however plausible or ingenious in themselves, they have at best a merely speculative, not a genuinely scientific interest. We may therefore dispense with anything like a detailed inquiry into or criticism of these theories. Two of the most popular of them may be respectively termed the onomatopoetic or sound-imitative and the exclamatory theories. According to the former, the first words of speech were onomatopoetic in character, that is, attempts to imitate by the medium of the human organs of speech, the various cries and noises of the animate and inanimate world. Thus, the idea of a "hawk" would come to be expressed by an imitative vocable based on the actual screech of that bird; the idea of a "rock" might be expressed by a combination of sounds intended in a crude way to reproduce the noise of a rock tumbling down hill or of a rock striking against the butt of a tree; and so on indefinitely. In course of time, as these imitative words by repeated use became more definitely fixed in phonetic form, they would tend to take on more and more the character of conventional sound-symbols, that is of words, properly speaking. The gradual phonetic modifications brought on in the further course of time would finally cause them to lose their original onomatopoetic form. It may be freely granted that many words, particularly certain nouns and verbs having reference to auditory phenomena, may have originated in this way; indeed, many languages, among them English, have at various times, up to and including the present, made use of such onomatopoetic words. It is difficult, however, to see how the great mass of a vocabulary, let alone a complex system of morphology and syntax, could have arisen from an onomatopoetic source alone. The very fact that onomatopoetic words of relatively recent origin are found here and there in sharp contrast to the overwhelmingly larger non-onomatopoetic portion of the language accentuates, if anything, the difficulty of a general explanation of linguistic origins by means of the onomatopoetic theory.

The exclamatory theory, as its name implies, would find the earliest form of speech in reflex cries of an emotional character. These also, like the hypothetical earliest words of imitative origin, would in course of time become conventionalized and sooner or later so modified in phonetic form as no longer to betray their exclamatory origin. The criticisms urged against the onomatopoetic theory apply with perhaps even greater force to the exclamatory one. It is, if anything, even more difficult here than in the former case to see how a small vocabulary founded on reflex cries could develop into such complex linguistic systems as we have actually to deal with. It is further significant that hardly anywhere, if at all, do the interjections play any but an inconsiderable, almost negligible, part in the lexical or grammatical machinery of language. An appeal to the languages of primitive peoples

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in order to find in them support for either of the two theories referred to is of little or no avail. Aside from the fact that their elaborateness of structure often seriously militates against our accepting them as evidence for primitive conditions, we do not on the whole find either the onomatopoetic or exclamatory elements of relatively greater importance in them than elsewhere. Indeed the layman would be often surprised, not to say disappointed, at the almost total absence of onomatopoetic traits in many American Indian languages, for instance. In Chinook and related dialects of the lower course of the Columbia, onomatopoesis is developed to a more than usual extent, yet, as though to emphasize our contention with an apparent paradox, hardly anywhere is the grammatical mechanism of a subtler, anything but primitive character. We are forced to conclude that the existence of onomatopoetic and exclamatory features is as little correlated with relative primitiveness as we have found the use of gesture to be. As with the two theories of origin we have thus briefly examined, so it will be found to be with other theories that have been suggested. They can not, any of them, derive support from the use of the argument of survivals in historically known languages; they all reduce themselves to merely speculative doctrines.

So much for general considerations on language history. Returning to the gradual process of change which has been seen to be characteristic of all speech, we may ask ourselves what is the most central or basic factor in this never-ceasing flux. Undoubtedly the answer must be: phonetic change or, to put it somewhat more concretely, minute or at any rate relatively trivial changes in pronunciation of vowels and consonants which, having crept in somehow or other, assert themselves more and more and end by replacing the older pronunciation, which becomes old-fashioned and finally extinct. In a general way we can understand why changes in pronunciation should take place in the course of time by a brief consideration of the process of language learning. Roughly speaking, we learn to speak our mother-tongue by imitating the daily speech of those who surround us in our childhood. On second thoughts, however, it will be seen that the process involved is not one of direct imitation, but of indirect imitation based on inference. Any given word is pronounced by a succession of various more or less complicated adjustments of the speech organs. These adjustments or articulations give rise to definite acoustic effects, effects which, in their totality, constitute speech. Obviously, if the child's imitative efforts were direct, it would have to copy as closely as possible the speech articulations which are the direct source of what it hears. But it is still more obvious that these speech articulations are largely beyond the power of observation and hence imitation. It follows that the actual sounds, not the articulations producing them, are imitated. This

means that the child is subject to a very considerable period of random and, of course, wholly involuntary experimenting in the production of such articulations as would tend to produce sounds or combinations of sounds approximating more or less closely those the child hears. In the course of this experimenting many failures are produced, many partial successes. The articulations producing the former, inasmuch as they do not give results that match the sounds which it was intended to imitate, have little or no associative power with these sounds, hence do not readily form into habits; on the other hand, articulations that produce successes or comparative successes will naturally tend to become habitual. It is easy to see that the indirect manner in which speech articulations are acquired necessitates an element of error, very slight, it may be, but error nevertheless. The habitual articulations that have established themselves in the speech of the child will yield auditory results that approximate so closely to those used in speech by its elders, that no need for correction will be felt. And yet it is inevitable that the sounds, at least some of the sounds, actually pronounced by the child will differ to a minute extent from the corresponding sounds pronounced by these elders. Inasmuch as every word is composed of a definite number of sounds and as, furthermore, the language makes use of only a limited number of sounds, it follows that corresponding to every sound of the language a definite articulation will have become habitual in the speech of the child; it follows immediately that the slight phonetic modifications which the child has introduced into the words it uses are consistent and regular. Thus if a vowel *a* has assumed a slightly different acoustic shade in one word, it will have assumed the same shade in all other cases involving the old *a*-vowel used by its elders, at any rate in all other cases in which the old *a*-vowel appears under parallel phonetic circumstances.

Here at the very outset we have illustrated in the individual the regularity of what have come to be called phonetic laws. The term "phonetic *law*" is justified in so far as a common tendency is to be discovered in a large number of individual sound changes. It is important, however, to understand that phonetic law is a purely historic concept, not one comparable to the laws of natural science. The latter may be said to operate regardless of particular times and places, while a phonetic law is merely a generalized statement of a process that took place in a restricted area within a definite period of time. The real difficulty in the understanding of phonetic change in language lies not in the fact of change itself, nor in the regularity with which such change proceeds in all cases affected, but, above all, in the fact that phonetic changes are not merely individual, but social phenomena; in other words, that the speech of all the members of a community in a given time and place undergoes certain regular phonetic changes. Without here attempting

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to go into the details of this process of the transformation of an individual phonetic peculiarity into a social one, we will doubtless not be far wrong in assuming that uniformity is at first brought about by a process of unconscious imitation, mutual to some extent, among the younger speakers of a restricted locality, later, perhaps, by the half-conscious adoption of the new speech peculiarity by speakers of neighboring localities, until, finally, it has spread either over the entire area in which the language is spoken or over some definite portion of it. In the former case the historic continuity of the language as a unit is preserved, in the latter a dialectic peculiarity has asserted itself. In the course of time other phonetic peculiarities spread that serve to accentuate the dialectic division. However, the ranges of operation of the different phonetic laws need not be coterminous, so that a network of dialectic groupings may develop. At least some of the dialects will diverge phonetically more and more, until in the end forms of speech will have developed that deserve to be called distinct languages. It can not be denied that, particularly after a considerable degree of divergence has been attained, other than purely phonetic characteristics develop to accentuate a difference of dialect, but every linguistic student is aware of the fact that the most easily formulated and, on the whole, the most characteristic differences between dialects and between languages of the same genetic group are phonetic in character.

True, some one will say, changes of a purely phonetic character can be shown to be of importance in the history of language, but what of changes of a grammatical sort? Are they not of equal or even greater importance? Strange as it may seem at first blush, it can be demonstrated that many, perhaps most, changes in grammatical form are at last analysis due to the operation of phonetic laws. Inasmuch as these phonetic laws affect the phonetic form of grammatical elements as well as of other linguistic material, it follows that such elements may get to have a new bearing, as it were, brought about by their change in actual phonetic content; in certain cases, what was originally a single grammatical element may in this way come to have two distinct forms, in other cases two originally distinct grammatical elements may come to have the same phonetic appearance, so that if circumstances are favorable, the way is paved for confusion and readjustment. Briefly stated, phonetic change may and often does necessitate a readjustment of morphologic groupings. It will be well to give an example or two from the history of the English language. In another connection we have had occasion to briefly review the history of the words *foot* and *feet*. We saw that there was a time when these words had respectively the form *fōt* and *fōti*. The final *i*-vowel of the second word colored, by a process of assimilation which is generally referred to as "umlaut," the *ō* of the first syllable and made it *ö*, later unrounded to *ē*; the final

i, after being dulled to an *e*, finally dropped off altogether. The form *fōti* thus step by step developed into the later *fēt*, which is the normal Anglo-Saxon form. Note the result. In *fōti* and other words of its type the plural is expressed by a distinct suffix *-i*, in *fēt*, as in modern English *feet*, and in words of corresponding form it is expressed by an internal change of vowel. Thus an entirely new grammatical feature in English, as also in quite parallel fashion in German, was brought about by a series of purely phonetic changes, in themselves of no grammatical significance whatever.

Such grammatical developments on the basis of phonetic changes have occurred with great frequency in the history of language. In the long run, not only may in this way old grammatical features be lost and new ones evolved, but the entire morphologic type of the language may undergo profound modification. A striking example is furnished again by the history of the English language. It is a well-known feature of English that absolutely the same word, phonetically speaking, may often, according to its syntactic employment, be construed as verb or as noun. Thus we not only *love* and *kiss*, but we also give our *love* or a *kiss*, that is, the words *love* and *kiss* may be indifferently used to predicate or to denominate an activity. There are so many examples in English of the formal, though not syntactic, identity of noun stem and verb stem that it may well be said that the English language is on the way to become of a purely analytic or isolating type, more or less similar to that of Chinese. And yet the typical Indogermanic language of earlier times, as represented say by Latin or Greek, always makes a rigidly formal, not merely syntactic, distinction between these fundamental parts of speech. If we examine the history of this truly significant change of type in English, we shall find that it has been due at last analysis to the operation of merely phonetic laws. The original Anglo-Saxon form of the infinitive of the verb *kiss* was *cyssan*, while the Anglo-Saxon form of the noun *kiss* was *cyss*. The forms in early middle English times became dulled to *kissen* and *kiss*, respectively. Final unaccented *-n* later regularly dropped off, so that the infinitive of the verb came to be *kisse*. In Chaucer's day the verb and the noun were still kept apart as *kisse* and *kiss*, respectively; later on, as a final unaccented *-e* regularly dropped off, *kisse* became *kiss*, so that there ceased to be any formal difference between the verb and noun. The history of the Anglo-Saxon verb *lufian* "to love" and noun *lufu* "love" has been quite parallel; the two finally became confused in a single form *luv*, modern English *love*. Once the pace has been set, so to speak, for an interchange in English between verbal and nominal use of the same word, the process, by the working of simple analogy, is made to apply also to cases where in origin we have to deal with only one part of speech; thus we may not only have a sick *stomach*

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but we may *stomach* an injury (noun becomes verb), and conversely we may not only *write up* a person, but he may get a *write up* (verb becomes noun). It has, I hope, become quite clear by this time how the trivial changes of pronunciation that are necessitated by the very process of speech acquirement may, in due course of time, profoundly change the fundamental characteristics of language. So also, if I may be pardoned the use of a simile, may the slow erosive action of water, continued through weary ages, profoundly transform the character of a landscape. If there is one point of historic method rather than another that the scientific study of language may teach other historical sciences, it is that changes of the greatest magnitude may often be traced to phenomena or processes of a minimal magnitude.

On the whole, phonetic change may be said to be a destructive or at best transforming force in the history of language. Reference has already been made to the influence of analogy, which may, on the contrary, be considered a preservative and creative force. In every language the existing morphological groups establish more or less definite paths of analogy to which all or practically all the lexical material is subjected; thus a recently acquired verb like *to telegraph* in English is handled in strict analogy to the great mass of old verbs with their varying forms. Such forms as *he walks* and *he laughs* set the precedent for *he telegraphs,* forms like *walking* and *laughing* for *telegraphing.* Without such clear-cut grooves of analogy, indeed, it would be impossible to learn to speak, a corollary of which is that there is a limit to the extent of grammatical irregularity in any language. When, for some reason or other, as by the disintegrating action of phonetic laws, too great irregularity manifests itself in the morphology of the language, the force of analogy may assert itself to establish comparative regularity, that is, forms which belong to ill-defined or sparsely represented morphologic groups may be replaced by equivalent forms that follow the analogy of better-defined or more numerously represented groups. In this way all the noun plurals of English, if we except a few survivals like *feet* and *oxen,* have come to be characterized by a suffixed *-s;* the analogical power of the old *-s* plurals was strong enough to transform all other plurals, of which Anglo-Saxon possessed several distinct types. The great power exerted by analogy is seen in the persistence with which children, whose minds are naturally unbiased by tradition, use such forms as *foots* and *he swimmed.* Let us not smile too condescendingly at the use of such forms; it may not be going too far to say that there is hardly a word, form, or sound in present-day English which was not at its first appearance looked upon as incorrect.

The disintegrating influence of phonetic change and the leveling influence of analogy are perhaps the two main forces that make for linguistic change. The various influences, however, that one language

may exert upon another, generally summed up in the word borrowing, are also apt to be of importance. As a rule such influence is limited to the taking over or borrowing of certain words of one language by another, the phonetic form of the foreign word almost always adapting itself to the phonetic system of the borrowing language. Besides this very obvious sort of influence, there are more subtle ways in which one language may influence another. It is a very noteworthy phenomenon that the languages of a continuous area, even if genetically unrelated and however much they may differ among themselves from the point of view of morphology, tend to have similar phonetic systems or, at any rate, tend to possess certain distinctive phonetic traits in common. It can not be accidental, for instance, that both the Slavic languages and some of the neighboring but absolutely unrelated Ural-Altaic languages (such as the Cheremiss of the Volga region) have in common a peculiar dull vowel, known in Russian as *yerí*, and also a set of palatalized or so-called "soft" consonants alongside a parallel set of unpalatalized or so-called "hard" consonants. Similarly, we find that Chinese and Siamese have in common with the unrelated Annamite and certain other languages of Farther India a system of musical accent. A third very striking example is afforded by a large number of American Indian linguistic stocks reaching along the Pacific coast from southern Alaska well into California and beyond, which have in common peculiar voiceless *l*-sounds and a set of so-called "fortis" consonants with cracked acoustic effect. It is obvious that in all these cases of comparatively uniform phonetic areas embracing at the same time diverse linguistic stocks and types of morphology we must be dealing with some sort of phonetic influence that one language may exert upon another. It may also be shown, though perhaps less frequently, that some of the morphologic traits of one language may be adopted by a neighboring, sometimes quite unrelated, language, or that certain fundamental grammatical features are spread among several unrelated linguistic stocks of a continuous area. One example of this sort of influence will serve for many. The French express the numbers 70, 80 and 90, respectively, by terms meaning 60-10, 4 twenties and 4 twenties 10; these numerals, to which there is no analogy in Latin, have been plausibly explained as survivals of a vigesimal method of counting, that is counting by twenties, the numbers above 20, a method that would seem to have been borrowed from Gallic, a Celtic language, and which still survives in Gaelic and other modern Celtic languages. This example is the more striking as the actual lexical influence which Celtic has exerted upon French is surprisingly small. So much for the influence of borrowing on the history of a language.

We may turn now to take up the matter of the varieties of human speech. One method of classifying the languages of the world has been

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already referred to; it may be termed the genetic method, inasmuch as it employs as its criterion of classification the demonstrable relation of certain languages as divergent forms of some older form of speech. As we have already seen, the linguistic stocks which we thus get as our largest units of speech are too numerous to serve as the simplest possible reduction of the linguistic material to be classified. One naturally turns, therefore, to a psychological classification, one in which the classificatory criterion is the fundamental morphological type to which a particular language or stock is to be assigned. Such a classification of morphological types may proceed from different points of view, varying emphasis being laid on this or that feature of morphology. It is clear at the outset that we have to distinguish between what we may call the subject-matter or content of morphology and the mere form pure and simple. Any grammatical system gives formal expression to certain modes or categories of thought, but the manner of expression of these categories or the formal method employed may vary greatly both for different categories and for different languages. Not infrequently the same logical category may be expressed by different formal methods in the same language. Thus, in English, the negative idea is expressed by means of three distinct formal methods exemplified by *untruthful,* with its use of a prefix *un-,* which can not occur as a freely movable word; *hopeless,* with its use of a suffix *-less,* which again can not occur as a freely movable word; and *not good,* in which the negative idea is expressed by an element (*not*) that has enough mobility to justify its being considered an independent word. We have here, then, three formal processes illustrated to which may be assigned the terms prefixing, suffixing and juxtaposing in definite order. While the same logical category may be grammatically expressed by different formal methods, it is even more evident that the same general formal method may be utilized for many different categories of thought. Thus, in English, the words *books* and *worked* use the same method of suffixing grammatical elements, the one to express the concept of plurality, the other that of past activity. The words *feet* and *swam,* furthermore, respectively express the same two concepts by the use of an entirely distinct formal method, that of internal vowel change.

On the whole one finds that it is possible to distinguish between two groups of grammatically expressed logical categories. One group may be characterized as derivational; it embraces a range of concepts expressed by grammatical elements that serve to limit or modify the signification of the word subjected to grammatical treatment without seriously affecting its relation to other words in the sentence. Such merely derivational elements are, in English, prefixes like *un-,* suffixes like *-less,* agentive suffixes like *-er* in *baker,* and numerous others. The second group of logical concepts and corresponding grammatical ele-

ments may be characterized as relational; they not merely serve to give the word affected a new increment of meaning, as is the case with the first group, but also assign it a definite syntactic place in the sentence, defining as they do its relation to other words of the sentence. Such a relational grammatical element, in English, is the plural *-s* suffix; a word, for instance, like *books* differs from its corresponding singular *book* not merely in the idea of plurality conveyed by the suffix *-s*, but assumes a different grammatical relation to other words in the sentence —a book *is*, but books *are*. Such relational elements are, furthermore, the case and gender suffixes of nouns and adjectives in Indogermanic languages; furthermore, the personal endings and tense suffixes of verbs. On the whole it may be said that derivational elements are of relatively more concrete signification than the relational ones and tend to become more thoroughly welded into a word unit with the basic word or stem to which they are attached or which they affect. This statement, however, is only approximately of general application and is subject to numerous qualifications. The greatest degree of concreteness of meaning conveyed by derivational elements is probably attained in many, though by no means all, American Indian languages, where ideas of largely material content are apt to be expressed by grammatical means. To this tendency the name of polysynthesis has been applied. Thus in Yana, an Indian language of northern California, such ideas as up a hill, across a creek, in the fire, to the east, from the south, immediately, in vain and a host of others are expressed by means of grammatical suffixes appended to the verb stem; so also in Nootka, an Indian language of Vancouver Island, so highly special ideas as on the head, in the hand, on the rocks, on the surface of the water, and many others, are similarly expressed as suffixes. It is important to note that, although the distinction between derivational and relational grammatical elements we have made is clearly reflected in some way or other in most languages, they differ a great deal as to what particular logical concepts are treated as respectively derivational or relational. Such concepts as those of sex gender, number and tense, which in Indogermanic are expressed as relational elements, are in other linguistic stocks hardly to be separated, as regards their grammatical treatment, from concepts treated in a clearly derivational manner. On the other hand, demonstrative ideas, which in most Indogermanic languages receive no relational syntactic treatment, may, as in the Kwakiutl language of British Columbia, serve an important relational function, analogous, say, to the Indogermanic use of gender; just as in Latin, for instance, such a sentence as "I saw the big house" is expressed by "I-saw house-masculine-objective big-masculine-objective," with a necessary double reference to the concepts of case relation and gender, so in Kwakiutl the sentence "I saw the house" would have to be ex-

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pressed by some such sentence as "I-saw-the-objective-near-you house-visible-near-you," with an analogous necessary double reference to the demonstrative relations involved. If, now, it has been shown that no necessary correlation exists between particular logical concepts and the formal method of their grammatical rendering, and if, furthermore, there can not even be shown to be a hard and fast line in grammatical treatment between concepts of a derivational and concepts of a more definitely relational character, what becomes of the logical category *per se* as a criterion of linguistic classification on the basis of form? Evidently it fails us. Of however great psychological interest it might be to map out the distribution in various linguistic stocks of logical concepts receiving formal treatment, it is clear that no satisfactory formal classification of linguistic types would result from such a mapping.

Having thus disposed of the subject-matter of linguistic morphology as a classificatory criterion, there is left to us the form pure and simple. Here we are confronted first of all by a number of formal grammatical methods or processes. These, being less numerous than the logical categories which they express themselves, and, furthermore, being on the whole more easily defined and recognized, would seem to lend themselves more easily to classificatory purposes. The simplest grammatical process is the *juxtaposing of words in a definite order,* a method made use of to perhaps the greatest extent by Chinese, to a very large extent also by English; the possibilities of the process from the point of view of grammatical effectiveness may be illustrated by comparing such an English sentence as "The man killed the bear" with "The bear killed the man," the actual words and forms being identical in the two sentences, yet definite case relations being clearly expressed in both. A somewhat similar process, yet easily enough kept apart, is *compounding,* that is, the fusion of two words or independent stems, into a firm word-unit; the process is particularly well developed in English, as illustrated by words like *railroad* and *underestimate,* and indeed is found widely spread among the most diverse linguistic stocks. In some languages, as in the Sioux and Paiute of our own country, compounding of verb stems is frequent, as illustrated by such forms as *to eat-stand,* that is *to eat while standing;* on the other hand, in not a few linguistic stocks, as the wide-spread Athabascan stock of North America and the Semitic languages, compounding as a regular process is almost or entirely lacking. Perhaps the most commonly used formal method of all is *affixing,* that is, the appending of grammatical elements to a word or to the body or stem of a word; the two most common varieties of affixing are prefixing and suffixing, examples of which have been already given from English. Probably the majority of linguistic stocks make use of both prefixes and suffixes, though

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they differ greatly as to the relative importance to be attached to these two classes of elements. Thus, while both in Indogermanic and in the Bantu languages of Africa prefixes and suffixes are to be found, we must note that the greater part of the grammatical machinery of Indogermanic is carried on by its suffixes, while it is the prefixes that in Bantu take the lion's share of grammatical work. There are also not a few linguistic stocks in which suffixing as a process is greatly developed, while prefixing is entirely unknown; such are Ural-Altaic, Eskimo, and the Kwakiutl and Nootka languages of British Columbia. On the other hand, languages in which prefixes are used, but no suffixes, seem to be quite rare. A third variety of affixing, known as infixing, consists in inserting a grammatical element into the very body of a stem; though not nearly so wide-spread as either prefixing or suffixing, it is a well-attested linguistic device in Malayan, Siouan, and elsewhere. Still another wide-spread grammatical process is *reduplication,* that is, the repetition of the whole or, generally, only part of the stem of a word; in Indogermanic we are familiar with this process in the formation, for instance, of the Greek perfect, while in many American Indian languages, though in far from all, the process is used to denote repeated activity. Of a more subtle character than the grammatical processes briefly reviewed thus far is *internal vowel* or *consonant change.* The former of these has been already exemplified by the English words *feet* and *swam* as contrasted with *foot* and *swim;* it attains perhaps its greatest degree of development in the Semitic languages. The latter, internal consonant change, is on the whole a somewhat rare phenomenon, yet finds an illustration in English in at least one group of cases. Beside such nouns as *house, mouse,* and *teeth* we have derived verbs such as *to house, mouse around,* and *teeth;* in other words a certain class of verbs is derived from corresponding nouns by the changing of the final voiceless consonants of the latter to the corresponding voiced consonants. In several non-Indogermanic linguistic stocks, as in Takelma of southwestern Oregon and in Fulbe of the Soudan, such grammatical consonant changes play a very important part. As the last formal grammatical process of importance may be mentioned *accent,* and here we have to distinguish between stress accent and musical or pitch accent. An excellent example of the grammatical use of stress accent is afforded in English by such pairs of words as *cónflict* and *conflíct, óbject* and *objéct,* the verb being accented on the second syllable, the noun on the first. Musical accent is a far more prevalent phonetic characteristic than is perhaps generally supposed; it is by no means confined to Chinese and neighboring languages of eastern Asia, but is found just as well in many languages of Africa and, as has been recently discovered by Mr. J. P. Harrington and the writer, in a few North American Indian

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languages. As a process of definite grammatical significance, however, musical accent is not so wide-spread. It is found, to give but one example, in the earlier stages of Indogermanic, as exemplified, among others, by classical Greek and by Lithuanian.

Having thus briefly reviewed the various grammatical processes used by different languages, we may ask ourselves whether the mapping out of the distribution of these processes would be of more service to us in our quest of the main types of language than we have found the grammatical treatment of logical concepts to be. Here a difficulty presents itself. If each linguistic stock were characterized by the use of just one or almost entirely one formal process, it would not be difficult to classify all languages rather satisfactorily on the basis of form. But there are great differences in this respect. A minority of linguistic stocks content themselves with a consistent and thoroughgoing use of one process, as does Eskimo with its suffixing of grammatical elements, but by far the larger number make use of so many that their classification becomes difficult, not to say arbitrary. Thus in Greek alone every one of the processes named above, excepting consonant change, can be exemplified. Even if we limit ourselves to a consideration of grammatical processes employed to express the relational concepts, we shall find the same difficulty, for the same language not infrequently makes use of several distinct processes for concepts of this class.

On a closer study of linguistic morphology, however, we find that it is possible to look at the matter of form in language from a different, at the same time more generalized, point of view than from that of the formal processes employed themselves. This new point of view has regard to the inner coherence of the words produced by the operation of the various grammatical processes, in other words, to the relative degree of unity which the stem or unmodified word plus its various grammatical increments or modifications possesses, emphasis being particularly laid on the degree of unity which the grammatical processes bring about between the stem and the increments which express relational concepts. On the basis of this formal criterion we may classify languages, at least for the purposes of this paper, into the three main types of linguistic morphology generally recognized. The first type is characterized by the use of words which allow of no grammatical modification whatever, in other words the so-called *isolating* type. In a language of this type all relational concepts are expressed by means of the one simple device of juxtaposing words in a definite order, the words themselves remaining unchangeable units that, according to their position in the sentence, receive various relational values. The classical example of such a language is Chinese, an illustration from which will serve as an example of the isolating type of

sentence. *wõo*^{3} (rising from deep tone) *pū*^{2} (rising from high) *p'ā*^{4} (sinking from middle) *t'ā*^{1} (high) may be literally translated "I not fear he," meaning "I do not fear him"; *wõo*^{3} "I" as subject comes first; *p'ā*^{4} "fear" as predicate follows it; *pū*^{2} "not," inasmuch as it limits the range of meaning given by the predicate, must precede it, hence stands between the subject and predicate; finally *t'ā*^{1} "he" as object follows the predicate. If we exchange the positions of *wõo*^{3} and *t'ā*^{1} we change their syntactical bearing; *wõo*^{3} "I" becomes "me" as object, while *t'ā*^{1}, which in our first sentence was best translated as "him" now becomes "he" as subject, and the sentence now takes on the meaning of "he does not fear me."

In the second main type of language, generally known as the *agglutinative,* the words are not generally unanalyzable entities, as in Chinese, but consist of a stem or radical portion and one or more grammatical elements which partly modify its primary signification, partly define its relation to other words in the sentence. While these grammatical elements are in no sense independent words or capable of being understood apart from their proper use as subordinate parts of a whole, they have, as a rule, their definite signification and are used with quasi-mechanical regularity whenever it is considered grammatically necessary to express the corresponding logical concept; the result is that the word, though a unit, is a clearly segmented one comparable to a mosaic. An example taken from Turkish, a typical agglutinative language, will give some idea of the spirit of the type it represents. The English sentence "They were converted into the (true) faith with heart and soul" is rendered in Turkish *džan u gönül-den iman-a gel-ir-ler*[2] literally translated, "Heart and soul-from belief-to come-ing-plural." The case-ending *-den* "from" is here appended only to *gönül* "soul" and not to *džan* "heart," though it applies equally to both; here we see quite clearly that a case-ending is not indissolubly connected with the noun to which it is appended, but has a considerable degree of mobility and corresponding transparency of meaning. The verb form *gel-ir-ler,* which may be roughly translated as "they come," is also instructive from our present point of view; the ending *-ler* or *-lar* is quite mechanically used to indicate the concept of plurality, whether in noun or verb, so that a verb form "they come," really "come-plural," is to some extent parallel to a noun form like "books," really "book-plural." Here we see clearly the mechanical regularity with which a logical concept and its corresponding grammatical element are associated.

In the third, the *inflective,* type of language, while a word may be analyzed into a radical portion and a number of subordinate gram-

[2] The Turkish and Chinese examples are taken from F. N. Finck's "Die Haupttypen des Sprachbaus."

matical elements, it is to be noted that the unity formed by the two is a very firm one, moreover that there is by no means a mechanical one-to-one correspondence between concept and grammatical element. An example from Latin, a typical inflective language, will illustrate the difference between the agglutinative and inflective types. In a sentence like *videō hominēs* "I see the men," it is true that the verb form *videō* may be analyzed into a radical portion *vide-* and a personal ending *-ō*, also that the noun form *hominēs* may be analyzed into a radical portion *homin-* and an ending *-ēs* which combines the concepts of plurality with objectivity, that is, a concept of number with one of case. But, and here comes the significant point, these words, when stripped of their endings, cease to have even a semblance of meaning, in other words, the endings are not merely agglutinated on to fully-formed words, but form firm word-units with the stems to which they are attached; the absolute or rather subjective form *homō*, "man," is quite distinct from the stem *homin-* which we have obtained by analysis. Moreover, it should be noted that the ending *-ō* is not mechanically associated with the concept of subjectivity of the first person singular, as is evidenced by such forms as *vīdī* "I saw" and *videam* "I may see"; in the ending *-ēs* of *hominēs* the lack of the mechanical association I have spoken of is even more pronounced, for not only are there in Latin many other noun endings which perform the same function, but the ending does not even express a single concept, but, as we have seen, a combined one.

The term *polysynthetic* is often employed to designate a fourth type of language represented chiefly in aboriginal America, but, as has been shown in another connection, it refers rather to the content of a morphologic system than to its form, and hence is not strictly parallel as a classificatory term to the three we have just examined. As a matter of fact, there are *polysynthetic* languages in America which are at the same time agglutinative, others which are at the same time inflective.

It should be carefully borne in mind that the terms isolating, agglutinative and inflective make no necessary implications as to the logical concepts the language makes use of in its grammatical system, nor is it possible definitely to associate these three types with particular formal processes. It is clear, however, that on the whole languages which make use of word order only for grammatical purposes are isolating in type, further, that languages that make a liberal grammatical use of internal vowel or consonant change may be suspected of being inflective. It was quite customary formerly to look upon the three main types of morphology as steps in a process of historical development, the isolating type representing the most primitive form of speech at which it was possible to arrive, the agglutinative coming next in order as a type

evolved from the isolating, and the inflective as the latest and so-called highest type of all. Further study, however, has shown that there is little to support this theory of evolution of types. The Chinese language, for instance, so far from being typical of a primitive stage, as used to be asserted, has been quite conclusively proven by internal and comparative evidence to be the resultant of a long process of simplification from an agglutinative type of language. English itself, in its historical affiliations an inflective language, has ceased to be a clear example of the inflective type and may perhaps be said to be an isolating language in the making. Nor should we be too hasty in attaching values to the various types and, as is too often done even to-day, look with contempt on the isolating, condescendingly tolerate the agglutinative, and vaunt the superiority of the inflective type. A well-developed agglutinative language may display a more logical system than the typically inflective language. And as for myself, I should not find it ridiculous or even paradoxical if one asserted that the most perfect linguistic form, at least from the point of view of logic, had been attained by Chinese, for here we have a language that, with the simplest possible means at its disposal, can express the most technical or philosophical ideas with absolute lack of ambiguity and with admirable conciseness and directness.

Editorial Note

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The following error in the originally published version has been corrected directly into the text printed here (the page reference is to the original):
p. 65, note 2: Fisk's (correct: Finck's)

LANGUAGE AND ENVIRONMENT*

THERE is a strong tendency to ascribe many elements of human culture to the influence of the environment in which the sharers of that culture are placed, some even taking the extreme position of reducing practically all manifestations of human life and thought to environmental influences. I shall not attempt to argue for or against the importance of the influence had by forces of environment on traits of culture, nor shall I attempt to show in how far the influence of environment is crossed by that of other factors. To explain any one trait of human culture as due solely to the force of physical environment, however, seems to me to rest on a fallacy. Properly speaking, environment can act directly only on an individual, and in those cases where we find that a purely environmental influence is responsible for a communal trait, this common trait must be interpreted as a summation of distinct processes of environmental influences on individuals. Such, however, is obviously not the typical form in which we find the forces of environment at work on human groups. In these it is enough that a single individual may react directly to his environment and bring the rest of the group to share consciously or unconsciously in the influence exerted upon him. Whether even a single individual can be truthfully said to be capable of environmental influence uncombined with influences of another character is doubtful, but we may at least assume the possibility. The important point remains that in actual society even the simplest environmental influence is either supported or transformed by social forces. Hence any attempt to consider even the simplest element of culture as due solely to the influence of environment must be termed misleading. The social forces which thus transform the purely environmental influences may themselves be looked upon as environmental in character in so far as a given individual is placed in, and therefore reacts to, a set of social factors. On the other hand, the social forces may be looked upon, somewhat metaphorically, as parallel in their influence to those of heredity in so far as they are handed down from generation to generation. That these traditional social forces are themselves subject to environmental, among other, changes, illustrates the complexity of the problem of cultural origins and development. On the whole one does better to employ the term "environment" only when reference is had to such influences, chiefly physical in character, as lie

outside the will of man. Yet in speaking of language, which may be considered a complex of symbols reflecting the whole physical and social background in which a group of men is placed, it is advantageous to comprise within the term environment both physical and social factors. Under physical environment are comprised geographical characters, such as the topography of the country (whether coast, valley, plain, plateau, or mountain), climate, and amount of rainfall, and what may be called the economic basis of human life, under which term are comprised the fauna, flora, and mineral resources of the region. Under social environment are comprised the various forces of society that mold the life and thought of each individual. Among the more important of these social forces are religion, ethical standards, form of political organization, and art.

According to this classification of environmental influences, we may expect to find two sets of environmental factors reflected in language, assuming for the moment that language is materially influenced by the environmental background of its speakers. Properly speaking, of course, the physical environment is reflected in language only in so far as it has been influenced by social factors. The mere existence, for instance, of a certain type of animal in the physical environment of a people does not suffice to give rise to a linguistic symbol referring to it. It is necessary that the animal be known by the members of the group in common and that they have some interest, however slight, in it before the language of the community is called upon to make reference to this particular [228] element of the physical environment. In other words, so far as language is concerned, all environmental influence reduces at last analysis to the influence of social environment. Nevertheless it is practical to keep apart such social influences as proceed more or less directly from the physical environment, and those that can not be easily connected with it. Language may be influenced in one of three ways: in regard to its subject matter or content, i.e., in regard to the vocabulary; in regard to its phonetic system, i.e., the system of sounds with which it operates in the building of words; and in regard to its grammatical form, i.e., in regard to the formal processes and the logical or psychological classifications made use of in speech. Morphology, or the formal structure of words, and syntax, or the methods employed in combining words into larger units or sentences, are the two main aspects of grammatical form.

It is the vocabulary of a language that most clearly reflects the physical and social environment of its speakers. The complete vocabulary of a language may indeed be looked upon as a complex inventory of all

the ideas, interests, and occupations that take up the attention of the community, and were such a complete thesaurus of the language of a given tribe at our disposal, we might to a large extent infer the characters of the physical environment and the characteristics of the culture of the people making use of it. It is not difficult to find examples of languages whose vocabulary thus bears the stamp of the physical environment in which the speakers are placed. This is particularly true of the languages of primitive peoples, for among these culture has not attained such a degree of complexity as to imply practically universal interests. From this point of view the vocabulary of primitive languages may be compared to the vocabularies of particular sections of the population of civilized peoples. The characteristic vocabulary of a coast tribe, such as the Nootka Indians, with its precise terms for many species of marine animals, vertebrate and invertebrate, might be compared to the vocabulary of such European fisher-folk as the Basques of southwestern France and northern Spain. In contrast to such coast peoples may be mentioned the inhabitants of a desert plateau, like the Southern Paiute of Arizona, Nevada, and Utah. In the [229] vocabulary of this tribe we find adequate provision made for many topographical features that would in some cases seem almost too precise to be of practical value. Some of the topographical terms of this language that have been collected are: divide, ledge, sand flat, semicircular valley, circular valley or hollow, spot of level ground in mountains surrounded by ridges, plain valley surrounded by mountains, plain, desert, knoll, plateau, canyon without water, canyon with creek, wash or gutter, gulch, slope of mountain or canyon wall receiving sunlight, shaded slope of mountain or canyon wall, rolling country intersected by several small hill-ridges, and many others.

In the case of the specialized vocabularies of both Nootka and Southern Paiute, it is important to note that it is not merely the fauna or topographical features of the country as such that are reflected, but rather the interest of the people in such environmental features. Were the Nootka Indians dependent for their food supply primarily on land hunting and vegetable products, despite their proximity to the sea, there is little doubt that their vocabulary would not be as thoroughly saturated as it is with sea lore. Similarly it is quite evident from the presence in Paiute of such topographical terms as have been listed, that accurate reference to topography is a necessary thing to dwellers in an inhospitable semi-arid region; so purely practical a need as definitely locating a spring might well require reference to several features of topographical detail. How far the interest in the physical environment

rather than its mere presence affects the character of a vocabulary may be made apparent by a converse case in English. One who is not a botanist, or is not particularly interested for purposes of folk medicine or otherwise in plant lore, would not know how to refer to numberless plants that make up part of his environment except merely as "weeds," whereas an Indian tribe very largely dependent for its food supply on wild roots, seeds of wild plants, and other vegetable products, might have precise terms for each and every one of these nondescript weeds. In many cases distinct terms would even be in use for various conditions of a single plant species, distinct reference being made as to whether it is raw or cooked,[230] or of this or that color, or in this or that stage of growth. In this way special vocabularies having reference to acorns or camass might be collected from various tribes of California or Oregon. Another instructive example of how largely interest determines the character of a vocabulary is afforded by the terms in several Indian languages for sun and moon. While we find it necessary to distinguish sun and moon, not a few tribes content themselves with a single word for both, the exact reference being left to the context. If we complain that so vague a term fails to do justice to an essential natural difference, the Indian might well retaliate by pointing to the *omnium gatherum* character of our term "weed" as contrasted with his own more precise plant vocabulary. Everything naturally depends on the point of view as determined by interest. Bearing this in mind, it becomes evident that the presence or absence of general terms is to a large extent dependent on the negative or positive character of the interest in the elements of environment involved. The more necessary a particular culture finds it to make distinctions within a given range of phenomena, the less likely the existence of a general term covering the range. On the other hand, the more indifferent culturally are the elements, the more likely that they will all be embraced in a single term of general application. The case may be summarized, if example can summarize, by saying that to the layman every animal form that is neither human being, quadruped, fish, nor bird, is a bug or worm. To this same type of layman the concept and corresponding word "mammal" would, for a converse reason, be quite unfamiliar.

There is an obvious difference between words that are merely words, incapable of further analysis, and such words as are so evidently secondary in formation as to yield analysis to even superficial reflection. A lion is merely a lion, but a mountain-lion suggests something more than the animal referred to. Where a transparent descriptive term is in use for a simple concept, it seems fair in most cases to conclude that

the knowledge of the environmental element referred to is comparatively recent, or at any rate that the present naming has taken place at a comparatively recent time. The destructive agencies of phonetic change would in the [231] long run wear down originally descriptive terms to mere labels or unanalyzable words pure and simple. I speak of this matter here because the transparent or untransparent character of a vocabulary may lead us to infer, if somewhat vaguely, the length of time that a group of people has been familiar with a particular concept. People who speak of lions have evidently been familiar with that animal for many generations. Those who speak of mountain lions would seem to date their knowledge of these from yesterday. The case is even clearer when we turn to a consideration of place-names. Only the student of language history is able to analyze such names as Essex, Norfolk, and Sutton into their component elements as East Saxon, North Folk, and South Town, while to the lay consciousness these names are etymological units as purely as are "butter" and "cheese." The contrast between a country inhabited by an historically homogeneous group for a long time, full of etymologically obscure place-names, and a newly settled country with its Newtowns, Wildwoods, and Mill Creeks, is apparent. Naturally much depends on the grammatical character of the language itself; such highly synthetic forms of speech as are many American Indian languages seem to lose hold of the descriptive character of their terms less readily than does English, for instance.

We have just seen that the careful study of a vocabulary leads to inferences as to the physical and social environment of those who use the vocabulary; furthermore, that the relatively transparent or untransparent character of the vocabulary itself may lead us to infer as to the degree of familiarity that has been obtained with various elements of this environment. Several students, notably Schrader, in dealing with Indo-Germanic material, have attempted to make a still more ambitious use of the study of vocabularies of related languages. By selecting such words as are held in common by all, or at least several, of a group of genetically related languages, attempts have been made to gather some idea of the vocabulary of the hypothetical language of which the forms of speech investigated are later varieties, and in this way to get some idea of the range of concepts possessed by the speakers of the reconstructed [232] language. We are here dealing with a kind of linguistic archeology. Undoubtedly many students of Indo-Germanic linguistics have gone altogether too far in their attempts to reconstruct culture from comparative linguistic evidence, but the value of evidence obtained in this way can not be summarily denied, even granted that

words may linger on long after their original significance has changed. The only pity is that in comparing languages that have diverged very considerably from each other, and the reconstructed prototype of which must therefore point to a remote past, too little material bearing on the most interesting phases of culture can generally be obtained. We do not need extended linguistic comparison to convince us that at a remote period in the past people had hands and fathers, though it would be interesting to discover whether they knew of the use of salt, for instance. Naturally the possibility of secondary borrowing of a word apparently held in common must always be borne in mind. Yet, on the whole, adequate knowledge of the phonology and morphology of the languages concerned will generally enable a careful analyst to keep apart the native from the borrowed elements. There has been too little comparative linguistic work done in America as yet to enable one to point to any considerable body of tangible results of cultural interest derived from such study, yet there is little doubt that with more intensive study such results will be forthcoming in greater degree. Surely a thoroughgoing study of Algonkin, Siouan, and Athabascan vocabularies from this point of view will eventually yield much of interest. As a passing example of significance, I shall merely point out that Nahua *oco-tl*, "Pinus tenuifolia," and Southern Paiute *oγó-mp'ᵘ*, "fir," point to a Uto-Aztekan stem *oko-* that has reference to some variety of pine or fir.

If the characteristic physical environment of a people is to a large extent reflected in its language, this is true to an even greater extent of its social environment. A large number, if not most, of the elements that make up a physical environment are found universally distributed in time and place, so that there are natural limits set to the variability of lexical materials in so far as they give expression to concepts derived from the physical world. A [233] culture, however, develops in numberless ways and may reach any degree of complexity. Hence we need not be surprised to find that the vocabularies of peoples that differ widely in character or degree of culture share this wide difference. There is a difference between the rich, conceptually ramified vocabulary of a language like English or French and that of any typical primitive group, corresponding in large measure to that which obtains between the complex culture of the English-speaking or French-speaking peoples of Europe and America with its vast array of specialized interests, and the relatively simple undifferentiated culture of the primitive group. Such variability of vocabulary, as reflecting social environment, obtains in time as well as place; in other words, the stock of culture concepts and

therefore also the corresponding vocabulary become constantly enriched and ramified with the increase within a group of cultural complexity. That a vocabulary should thus to a great degree reflect cultural complexity is practically self-evident, for a vocabulary, that is, the subject matter of a language, aims at any given time to serve as a set of symbols referring to the culture background of the group. If by complexity of language is meant the range of interests implied in its vocabulary, it goes without saying that there is a constant correlation between complexity of language and culture. If, however, as is more usual, linguistic complexity be used to refer to degree of morphologic and syntactic development, it is by no means true that such a correlation exists. In fact, one might almost make a case for an inverse correlation and maintain that morphologic development tends to decrease with increase of cultural complexity. Examples of this tendency are so easy to find that it is hardly worth our while going into the matter here. It need merely be pointed out that the history of English and French shows a constant loss in elaborateness of grammatical structure from their earliest recorded forms to the present. On the other hand, too much must not be made of this. The existence of numerous relatively simple forms of speech among primitive peoples discourages the idea of any tangible correlation between degree or form of culture and form of speech.

Is there, then, no element of language but its mere concrete sub- [134]
ject matter or vocabulary that can be shown to have any relation to the physical and social environment of the speakers? It has sometimes been claimed that the general character of the phonetic system of a language is more or less dependent on physical environment, that such communities as dwell in mountainous regions or under other conditions tending to make the struggle for existence a difficult one develop acoustically harsh forms of speech, while such as are better favored by nature make use of relatively softer phonetic systems. Such a theory is as easily disproved as it seems plausible. It is no doubt true that examples may be adduced of harsh phonetic systems in use among mountaineers, as for instance those of various languages spoken in the Caucasus; nor is it difficult to find instances of acoustically pleasant forms of speech in use among groups that are subjected to a favorable physical environment. It is just as easy, however, to adduce instances to the contrary of both of these. The aboriginal inhabitants of the Northwest Coast of America found subsistence relatively easy in a country abounding in many forms of edible marine life; nor can they be said to have been subjected to rigorous climatic conditions; yet in phonetic harshness

their languages rival those of the Caucasus. On the other hand, perhaps no people has ever been subjected to a more forbidding physical environment than the Eskimos, yet the Eskimo language not only impresses one as possessed of a relatively agreeable phonetic system when compared with the languages of the Northwest Coast, but may even perhaps be thought to compare favorably with American Indian languages generally. There are many cases, to be sure, of distinct languages with comparable phonetic systems spoken over a continuous territory of fairly uniform physical characteristics, yet in all such cases it can readily be shown that we are dealing not with the direct influence of the environment itself, but with psychological factors of a much subtler character, comparable perhaps to such as operate in the diffusion of cultural elements. Thus the phonetic systems of Tlingit, Haida, Tsimshian, Kwakiutl, and Salish are not similar because belonging to languages whose speakers are placed in about the same set of environmental conditions, but merely because these speakers are geographically contiguous to [235] each other and hence capable of exerting mutual psychological influence.

Leaving these general considerations on the lack of correlation between physical environment and a phonetic system as a whole we may point to several striking instances, on the one hand, of phonetic resemblances between languages spoken by groups living in widely different environments and belonging to widely different cultural strata, on the other hand, of no less striking phonetic differences that obtain between languages spoken in adjoining regions of identical or similar environment and sharing in the same culture. These examples will serve to emphasize the point already made. The use of pitch accent as a significant element of speech is found in Chinese and neighboring languages of southeastern Asia, Ewe and other languages of western Africa, Hottentot in South Africa, Swedish, Tewa in New Mexico, and Takelma in southwestern Oregon. In this set of instances we have illustrated practically the whole gamut of environmental and cultural conditions. Nasalized vowels occur not only in French and Portuguese, but also in Ewe, Iroquois, and Siouan. "Fortis" consonants, i.e., stop consonants pronounced with simultaneous closure and subsequent release of glottal cords, are found not only in many languages of America west of the Rockies, but also in Siouan, and in Georgian and other languages of the Caucasus. Glottal stops as significant elements of speech are found not only plentifully illustrated in many, perhaps most, American Indian languages, but also in Danish and in Lettish, one of the Letto-Slavic languages of Western Russia. So highly peculiar

sounds as the hoarse hâ and strangulated-sounding 'ain of Arabic are found in almost identical form in Nootka. And so on indefinitely. On the other hand, while the English and French may, on the whole, be said to be closely related culturally, there are very striking differences in the phonetic systems made use of by each. Turning to aboriginal America, we find that two such closely related groups of tribes, from a cultural standpoint, as the Iroquois and neighboring eastern Algonkins speak widely different languages, both phonetically and morphologically. The Yurok, Karok, and Hupa, all three occupying a small territory (3) in northwestern California, form a most intimate cultural unit. Yet here again we find that the phonetic differences between the languages spoken by these tribes are great, and so on indefinitely again. There seems nothing for it, then, but to postulate an absolute lack of correlation between physical and social environment and phonetic systems, either in their general acoustic aspect or in regard to the distribution of particular phonetic elements.

One feels inclined to attribute a lack of correlation between phonetic system and environment to the comparatively accidental character of a phonetic system in itself; or, to express it somewhat more clearly, to the fact that phonetic systems may be thought to have a quasi-mechanical growth, at no stage subject to conscious reflection and hence not likely in any way to be dependent on environmental conditions, or, if so, only in a remotely indirect manner. Linguistic morphology, on the other hand, as giving evidence of certain definite modes of thought prevalent among the speakers of the language, may be thought to stand in some sort of relation to the stock of concepts forming the mental stock in trade, as it were, of the group. As this stock of concepts, however, is necessarily determined by the physical and social environment, it follows that some sort of correlation between these environments and grammatical structure might be looked for. And yet the negative evidence is as strong in this case as in the parallel one just disposed of. We may consider the subject matter of morphology as made up of certain logical or psychological categories of thought that receive grammatical treatment and of formal methods of expressing these. The distinct character of these two groups of morphological phenomena may be illustrated by pointing out that neighboring languages may influence, or at any rate resemble, each other in the one set without necessary corresponding influence or resemblance in the other. Thus, the device of reduplication is widespread in American Indian languages, yet the concepts expressed by this method vary widely. Here we deal with a widespread formal device as such. Conversely, the notion of

inferential activity, that is, of action, knowledge of which is based on inference rather than personal authority is also found widely expressed in American languages, but [237] by means of several distinct formal processes. Here we deal with a widespread grammatically utilized category of thought as such.

Now, in rummaging through many languages one finds numerous instances both of striking similarities in the formal processes of morphology and of striking similarities or identities of concepts receiving grammatical treatment, similarities and identities that seem to run in no kind of correspondence to environmental factors. The presence of vocalic changes in verb or noun stems in Indo-Germanic languages, Semitic, Takelma, and Yana may be given as an example of the former. A further example is the presence of the infixation of grammatical elements in the body of a noun or verb stem in Malayan, Mon-Khmer, and Siouan. It will be noticed that despite the very characteristic types of formal processes that I have employed for illustrative purposes they crop up in markedly distinct environments. A striking example, on the other hand, of a category of thought of grammatical significance found irregularly distributed and covering a wide range of environments, is grammatical gender based on sex. This we find illustrated in Indo-Germanic, Semitic, Hottentot of South Africa, and Chinook of the lower Columbia. Other striking examples are the existence of syntactic cases, primarily subjective and objective, in Indo-Germanic, Semitic, and Ute; and the distinction between exclusive and inclusive duality or plurality of the first person found in Kwakiutl, Shoshonean, Iroquois, Hottentot, and Melanesian.

The complementary evidence for such lack of correlation as we have been speaking of is afforded by instances of morphologic differences found in neighboring languages in use among peoples subjected to practically the same set of environmental influences, physical and social. A few pertinent examples will suffice. The Chinook and Salish tribes of the lower Columbia and west coast of Washington form a cultural unit set in a homogeneous physical environment, yet far-reaching morphologic differences obtain between the languages of the two groups of tribes. The Salish languages make a superabundant use of reduplication for various grammatical purposes, whereas in Chinook reduplication, though occurring in a limited sense, has no grammatical significance. On the other hand, the system of sex gender rigidly carried out in the [238] noun and verb system of Chinook is shared by the Coast Salish dialects only in so far as prenominal articles are found to express distinctions of gender, while the interior Salish languages lack even

this feature entirely. Perhaps an even more striking instance of radical morphological dissimilarity in neighboring languages of a single culture area is afforded by Yana and Maidu, spoken in north central California. Maidu makes use of a large number of grammatical prefixes and employs reduplication for grammatical purposes to at least some extent. Yana knows nothing of either prefixes or reduplication. On the other hand, Maidu lacks such characteristic Yana features as the difference in form between the men's and women's language, and the employment of several hundreds of grammatical suffixes, some of them expressing such concrete verbal force as to warrant their being interpreted rather as verb stems in secondary position than as suffixes proper. To turn to the Old World, we find that Hungarian differs from the neighboring Indo-Germanic languages in its lack of sex gender and in its employment of the principle of vocalic harmony, a feature which, though primarily phonetic in character, nevertheless has an important grammatical bearing.

In some respects the establishment of failure of phonetic and morphologic characteristics of a language to stand in any sort of relation to the environment in which it is spoken seems disappointing. Can it be, after all, that the formal groundwork of a language is no indication whatsoever of the cultural complex that it expresses in its subject matter? If we look more sharply, we shall find in certain cases that at least some elements that go to make up a cultural complex are embodied in grammatical form. This is true particularly of synthetic languages operating with a large number of prefixes or suffixes of relatively concrete significance. The use in Kwakiutl and Nootka, for instance, of local suffixes defining activities as taking place on the beach, rocks, or sea, in cases where in most languages it would be far more idiomatic to omit all such reference, evidently points to the nature of the physical environment and economic interests connected therewith among these Indians. Similarly, when we find that such ideas as those of buying, giving a feast of some kind of food, giving a potlatch for some person, and [239] asking for a particular gift at a girl's puberty ceremony, are expressed in Nootka by means of grammatical suffixes, we are led to infer that each of these acts is a highly typical one in the life of the tribe, and hence constitute important elements in its culture. This type of correlation may be further exemplified by the use in Kwakiutl, Nootka, and Salish of distinct series of numerals for various classes of objects, a feature which is pushed to its greatest length, perhaps, in Tsimshian. This grammatical peculiarity at least suggests definite methods of counting, and would seem to emphasize the

concept of property, which we know to be so highly developed among the West Coast Indians. Adopting such comparatively obvious examples as our cue, one might go on indefinitely and seize upon any grammatical peculiarity with a view to interpreting it in terms of culture or physical environment. Thus, one might infer a different social attitude toward woman in those cases where sex gender is made grammatical use of. It needs but this last potential example to show to what flights of fancy this mode of argumentation would lead one. If we examine the more legitimate instances of cultural-grammatical correlation, we shall find that it is not, after all, the grammatical form as such with which we operate, but merely the content of that form; in other words, the correlation turns out to be, at last analysis, merely one of environment and vocabulary, with which we have already become familiar. The main interest morphologically in Nootka suffixes of the class illustrated lies in the fact that certain elements used to verbify nouns are suffixed to noun stems. This is a psychological fact which can not well be correlated with any fact of culture or physical environment that we know of. The particular manner in which a noun is verbified, or the degree of concreteness of meaning conveyed by the suffix, are matters of relative indifference to a linguist.

We seem, then, perhaps reluctantly, forced to admit that, apart from the reflection of environment in the vocabulary of a language, there is nothing in the language itself that can be shown to be directly associated with environment. One wonders why, if such be the case, so large a number of distinct phonetic systems and types of linguistic morphology are found in various parts of the world. Perhaps the whole problem of the relation between culture and [240] environment generally, on the one hand, and language, on the other, may be furthered somewhat by a consideration simply of the rate of change or development of both. Linguistic features are necessarily less capable of rising into the consciousness of the speakers than traits of culture. Without here attempting to go into an analysis of this psychological difference between the two sets of phenomena, it would seem to follow that changes in culture are the result, to at least a considerable extent, of conscious processes or of processes more easily made conscious, whereas those of language are to be explained, if explained at all, as due to the more minute action of psychological factors beyond the control of will or reflection. If this be true, and there seems every reason to believe that it is, we must conclude that cultural change and linguistic change do not move along parallel lines and hence do not tend to stand in a close causal relation. This point of view makes it quite legitimate

to grant, if necessary, the existence at some primitive stage in the past of a more definite association between environment and linguistic form than can now be posited anywhere, for the different character and rate of change in linguistic and cultural phenomena, conditioned by the very nature of those phenomena, would in the long run very materially disturb and ultimately entirely eliminate such an association.

We may conceive, somewhat schematically, the development of culture and language to have taken place as follows: A primitive group, among whom even the beginnings of culture and language are as yet hardly in evidence, may nevertheless be supposed to behave in accordance with a fairly definite group psychology, determined, we will suppose, partly by race mind, partly by physical environment. On the basis of this group psychology, whatever tendencies it may possess, a language and a culture will slowly develop. As both of these are directly determined, to begin with, by fundamental factors of race and physical environment, they will parallel each other somewhat closely, so that the forms of cultural activity will be reflected in the grammatical system of the language. In other words, not only will the words themselves of a language serve as symbols of detached cultural elements, as is true of languages at all periods of development, but we may suppose the [240] grammatical categories and processes themselves to symbolize corresponding types of thought and activity of cultural significance. To some extent culture and language may then be conceived of as in a constant state of interaction and definite association for a considerable lapse of time. This state of correlation, however, can not continue indefinitely. With gradual change of group psychology and physical environment more or less profound changes must be effected in the form and content of both language and culture. Language and culture, however, are obviously not the direct expression of racial psychology and physical environment, but depend for their existence and continuance primarily on the forces of tradition. Hence, despite necessary modifications in either with the lapse of time, a conservative tendency will always make itself felt as a check to those tendencies that make for change. And here we come to the crux of the matter. Cultural elements, as more definitely serving the immediate needs of society and entering more clearly into consciousness, will not only change more rapidly than those of language, but the form itself of culture, giving each element its relative significance, will be continually shaping itself anew. Linguistic elements, on the other hand, while they may and do readily change in themselves, do not so easily lend themselves to regroupings, owing to the subconscious character of grammatical classification. A

grammatical system as such tends to persist indefinitely. In other words, the conservative tendency makes itself felt more profoundly in the formal groundwork of language than in that of culture. One necessary consequence of this is that the forms of language will in course of time cease to symbolize those of culture, and this is our main thesis. Another consequence is that the forms of language may be thought to more accurately reflect those of a remotely past stage of culture than the present ones of culture itself. It is not claimed that a stage is ever reached at which language and culture stand in no sort of relation to each other, but simply that the relative rates of change of the two differ so materially as to make it practically impossible to detect the relationship.

Though the forms of language may not change as rapidly as those of culture, it is doubtless true that an unusual rate of cultural change is accompanied by a corresponding accelerated rate of [242] change in language. If this point of view be pushed to its legitimate conclusion, we must be led to believe that rapidly increasing complexity of culture necessitates correspondingly, though not equally rapid, changes in linguistic form and content. This view is the direct opposite of the one generally held with respect to the greater conservatism of language in civilized communities than among primitive peoples. To be sure, the tendency to rapid linguistic change with increasingly rapid complexity of culture may be checked by one of the most important elements of an advanced culture itself, namely, the use of a secondary set of language symbols necessarily possessing greater conservatism than the primarily spoken set of symbols and exerting a conservative influence on the latter. I refer to the use of writing. In spite of this, however, it seems to me that the apparent paradox that we have arrived at contains a liberal element of truth. I am not inclined to consider it an accident that the rapid development of culture in western Europe during the last 2000 years has been synchronous with what seems to be unusually rapid changes in language. Though it is impossible to prove the matter definitely, I am inclined to doubt whether many languages of primitive peoples have undergone as rapid modification in a corresponding period of time as has the English language.

We have no time at our disposal to go more fully into this purely hypothetical explanation of our failure to bring environment and language into causal relation, but a metaphor may help us to grasp it. Two men start on a journey on condition that each shift for himself, depending on his own resources, yet traveling in the same general direction. For a considerable time the two men, both as yet unwearied,

will keep pretty well together. In course of time, however, the varying degrees of physical strength, resourcefulness, ability to orient oneself, and many other factors, will begin to manifest themselves. The actual course traveled by each in reference to the other and to the course originally planned will diverge more and more, while the absolute distance between the two will also tend to become greater and greater. And so with many sets of historic sequences which, at one time causally associated, tend in course of time to diverge.

Editorial Note

American Anthropologist n.s. 14 (1912), 226–242. [Reprinted in: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 89–103]. Read before the American Anthropological Association, Washington, D.C., December 28, 1911.

Section Three

Theoretical, Descriptive and Historical Linguistics (1923–1929)

Introduction: Theoretical, Descriptive and Historical Linguistics, 1923 – 1929

The papers in this section date from the end of Sapir's stay in Ottawa to his first years in Chicago. They testify to Sapir's intellectual development as a general linguist, and to his attempt at situating language in the encompassing study of human behaviour and social structure. The texts included here consist of four reviews, an encyclopedia article, and five journal articles, two of which were published in the then recently created journal of the Linguistic Society of America, *Language*. Some of the papers thus coincide with the autonomization of linguistics as an academic discipline in the U.S. and with the recognition of the study of language as a (social) science on its own.

The major thematic lines running through almost all of the papers of this section are the concept of patterning in language —Sapir's "Sound Patterns in Language" (1925) marks a crucial date here—, the emphasis laid on linguistic symbolization and the symbolism inherent in the linguistic material (an issue with respect to which Sapir's reading and reviewing of Ogden and Richards's *The Meaning of Meaning* (1923) is of high relevance), and the preoccupation with defining the place of linguistics as a science.

Sapir's "Sound Patterns in Language," a classic article which Sapir regularly referred to in his later publications, shows that the study of phonetics transcends the domain of physicalist description, and necessarily includes the study of the "psychology of a language." The sounds of a language belong as such to a definite system, defined by its proper functionality and its specific range of variation. Materially (phonically) similar sounds across languages will differ functionally and systemically. Sapir takes up here insights from historical-comparative linguistics (more specifically in the field of phonology) and descriptive anthropological linguistics (e.g., Boas's views on "alternating sounds"), but integrates them in a general structural view of language: the theoretical concept grounding this view is that of *patterning*, the language-immanent organization of structural relationships. It is precisely in terms of systemic patterning that a distinction can be made between phones and phonemes: distinct sounds are not necessarily distinctive sounds, nor do similar sounds necessarily belong to the same phonemic unit. Whereas in his *Language* (1921), Sapir did not use the notion of *phoneme*, here he makes a clear distinction between phonetics and phonemics (p. 40). The structural description of a language involves decisions on alignment (p. 41), which can only be taken with respect to patterns (pp. 41-42). Sapir ends this paper with drawing the implications for sound change: the (phonemic) patterns of a language define a range of variation but they also provide an orientation for the changes that can affect the system.

In "The Grammarian and his Language" (1924) Sapir addresses the issue of patterns in language, discussing it in general terms ("language as form;" cf. his book *Language*, 1921, chapters IV and V), and combining it with recent insights into linguistic symbolization. Undoubtedly, his reading of Ogden and Richards's *The Meaning of Meaning* (1923) had made him aware of the complex symbolic function of language. His short review, entitled "An Approach to Symbolism," reflects the deep interest he had taken in this "original" book, which opened up vistas for new sciences (p. 573), and which, while showing the relevance of language for philosophers and psychologists, at the same time dismissed the traditional philosophical approach to language.[1] Largely subscribing to the "relativistic"[2] approach of Ogden and Richards, who pointed out the pervasive (and also delusive) role played by words in habitual thinking, Sapir somehow deplores their neglect of language form as symbolic on itself[3] (an issue which is explored in his 1929 paper "A Study in Phonetic Symbolism"). Sapir's short, artfully written review of Ogden and Richards's book gives only a dim reflection of the deep impact the work seems to have had on his linguistic thinking. It allowed him to integrate a non-reductionist form of psychology in his general approach of language(s). As is clear from the article "The Grammarian and his Language," Sapir could hardly feel intellectual affinity with the behaviouristic psychology which was then flourishing in the United States. This form of psychology, in which language is defined as "subvocal laryngeating" ("The Grammarian and his Language," p. 150; see also the article "Philology"), was, in Sapir's view, a poor ally to linguistics. In his paper Sapir deplores the lack of general interest taken by Americans in linguistics, and in language as a structure. He attributes this to an overly rationalistic, pragmaticist attitude and to a general lack of culture (pp. 150–151). Moreover, linguistics as an autonomous science hardly seems to appeal to Americans, who expect to find in linguistics answers to questions of a larger interest (such as the relation of language to culture, or the relation of language to psychology): on both counts, they are likely to be disappointed. In his paper, published in the *American Mercury* and clearly written for a larger audience, Sapir sets himself the difficult task of replacing the view of the grammarian as a "pedant" by that of the grammarian (or linguist) interested in studying the *formal completeness of language* (made visible in the variety of languages as formal systems). The emphasis here is on language as grammatical form, not as vocabulary (p. 151); this form serves as a frame of reference, as a method or approach to experience. Using an analogy with mathematics (see also Sapir's 1931 "Conceptual Categories in Primitive Languages," included in section VI), Sapir

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[1] On the impact of Ogden and Richards's work on linguistic theory, see Terrence Gordon, "C.K. Ogden, E. Sapir, L. Bloomfield and the Geometry of Semantics", in *History and Historiography of Linguistics. Papers from the Fourth International Conference on the History of the Language Sciences (Trier, 24–28 August, 1987)*, edited by Hans-Josef Niederehe and E.F.K. Koerner (Amsterdam/Philadelphia, 1990), 821–832.

[2] An approach which Sapir also welcomes in the writings of Fritz Mauthner [1849–1923].

[3] "Is it not a highly significant fact none the less, that its form is so essentially of symbolic pattern" (p. 573).

defines language as a matrix for the expression of thought (p. 152); different languages show different formal "techniques" (p. 152), correspond to a specific form-feeling (pp. 152–153) of their speakers, and constitute different frames of reference. Taking up the idea of (unconscious) patterning, Sapir sees linguistic forms as providing an unconsciously elaborated orientation in the experience of reality. Language form provides us with an "intuitive" feeling for relations, though not in an absolutely uniform way; drawing the attention of philosophers to the work of Ogden and Richards (p. 154). Sapir warns us against preconceived ideas and unwarranted extrapolations. The study of language is recommended as a relativistic eye-opener: "Perhaps the best way to get behind our thought processes and to eliminate from them all the accidents or irrelevances due to their linguistic garb is to plunge into the study of exotic modes of expression. At any rate, I know of no better way to kill spurious "entities"" (p. 154). As a symbolic system, language is related to experience, but not in a deterministic way: there are many facets to experience, and language forms allow for divergent analyses of what could be superficially described as "the same experience." Just like in chapter V of his *Language* (New York, 1921), Sapir shows (pp. 154–155) how the same event ("the stone falls") can be categorized in manifold ways, in relation to the set of formal statements available in each language. The study of language thus opens fascinating perspectives for approaching what Sapir calls the "relativity of the form of thought" or relativity of concepts (p. 155). A passing reference is made to physical and psychological relativity.

Much in line with this 1924 article is the paper "Language as a Form of Human Behavior,"[4] in which Sapir seems to envisage a dialogue, or rapprochement with psychology, philosophy and sociology. As Sapir notes at the beginning of this paper, the fundamental problems of linguistics have to be related to the study of human behaviour in general (p. 421). The central part of the paper is taken up by the presentation of the essential characteristics of language, defined as the arrangement of all the elements of experience (p. 425). These are:
(a) the completeness of its formal development (or "grammar," cf. p. 423);
(b) its status as a specific system of behaviour; although language is all-pervasive in human behaviour it is also an autonomous, unconscious system of behaviour, it incorporates naturally acquired knowledge (p. 423), which can be made explicit in statements expressing linguistic knowledge;
(c) the indirect character of its symbolic nature; this feature corresponds to the arbitrariness of linguistic signs (p. 424);
(d) the universality of language as a human fact, coupled with the "infinite" variety of words, forms and constructions across languages, this characteristic

[4] This paper can be seen as occupying a midway position (chronologically and intellectually speaking) between Sapir's more narrowly "linguistic" approach to language (as in his 1911 paper "The History and Methods of Human Speech" [reprinted here in section II], and in his *Language* of 1921), and his broader psychological approach to language (as we find it in his article "Language" of 1933 [reprinted in section VI of this volume]).

allows Sapir to oppose the ground-plan of language to the overt forms of languages;
(e) the joining of a denotative and an expressive dimension in language: on the one hand, language is an abstract classification of reality, while on the other hand, it constitutes the locus of the most individual expressions (p. 426, p. 431).[5]

As noted by Sapir, the latter characteristic is also a source of misunderstandings: the signs of natural languages carry with them a number of not strictly controllable connotations (p. 432); such connotations do not occur in artificially constructed languages. An international language for communication —the need for which Sapir stresses at the end of his paper[6]— can be constructed as an objective language of reference.

In the second part of the paper Sapir considers the origin of language.[7] He proposes the hypothesis that language originated as conventionalized gesture (pp. 426–427): auditory gestures became conventionalized as spoken language. This process involved a functional shift: from secondary symbolization to primary symbolization (pp. 428–429). The origin of speech thus involved two stages: a stage of gestural communication, and a stage of secondary referentialization (p. 430). In Sapir's view this hypothesis accounts for two facts:
(a) the iconicity of the material shape of language (p. 429; see also the 1929 article "A Study in Phonetic Symbolism");
(b) the universal development of language as a symbolic system; the explanation of the latter fact should be sought in the disponibility of speech-unspecific organs for producing linguistic signs.[8]

Some of the issues discussed in the three articles "Sound Patterns in Language," "The Grammarian and his Language," and "Language as a Form of Human Behavior," are also touched upon in Sapir's reviews included in this section. As noted above, the review of Ogden and Richards's *The Meaning of Meaning* highlights the symbolic function of language, and the complex psychic and social role played by linguistic signs in our approach to reality.

The review of Kent's *Language and Philology* (1923), published in 1928, contains an implicit criticism of the linguistic myopia of Classicists and Indo-European scholars, and corrects the exaggerated view of English as an "analytical," untypical Indo-European language: as Sapir shows, a more balanced typological view (based on the typological theory proposed in *Language*, 1921, chapter VI) places English within the group of fusional and mixed-relational languages, showing the same "patterning" (p. 85) as ("synthetic") Indo-European languages like Sanskrit or Latin.

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5 See also *Language* (New York, 1921), pp. 39–42.

6 See also the papers reprinted in sections IV and V.

7 See also the papers reprinted in sections I and II.

8 See also *Language* (New York, 1921), pp. 7–8.

The equally short review of Jespersen's *Mankind, Nation and Individual from a Linguistic Point of View* (1925) summarizes, or simply mentions Jespersen's views on notions such as *language, speech, dialect*, and on the need for an international auxiliary language.[9] Sapir deplores the lack of originality of Jespersen's booklet, but praises the author's "common sense." He criticizes Jespersen for dismissing the Saussurean distinction between *langue* (language: the global pattern underlying the linguistic behaviour of a group) and *parole* (speech: the time- and place-bound linguistic behaviour of individuals in a group), and rightly points out that Jespersen's (positivistic) dismissal is contradicted by his own writings on the history of English, and would lead to a fully atomistic description of cultural (including linguistic) phenomena: "If carried to their logical conclusion, Jespersen's strictures would demolish the study of all cultural patterns and condemn the social scientist to the interminable listing of individual events" (p. 498).

The review of the collective volume edited in 1924 by Meillet and Cohen, as well as the article "Philology" bring us back to Sapir's education and early work as a philologist (in the sense of "practitioner of historical-comparative linguistics"). In his review of *Les langues du monde* —a work written by "linguistic specialists" (p. 373),[10] Sapir shows his familiarity with the state of research on the world's languages, and with ambitious, monogenetic reconstructions like those of the Italian scholar Alfredo Trombetti [1866–1929]. While approving of the (phonetically unavoidable) division of labour necessitated by a survey of the world's languages, and while noting a few merits of the volume (such as the unified treatment of Hamitic-Semitic, or the use of the term "Sino-Tibetan"[11]), Sapir regrets some serious omissions (Siberian and Andaman languages), and the disparity (both in coverage and in [more or less] systematic treatment) of the separate chapters, and shows the need for a combined perspective, that of the typologist (here Sapir recommends Franz Nikolaus Finck's work, *Die Sprachstämme des Erdkreises*) and the comparatist. Sapir mentions the possibility of including a structural sketch of Amerindian, African or Polynesian language families, but his most serious criticism concerns the treatment of American Indian languages, a domain too vast and too complex to be assigned to a single scholar (in the present case a specialist of South American languages, viz. Paul Rivet).

The article "Philology" of the 13th edition of the *Encyclopaedia Britannica*[12] is mainly devoted to historical-comparative linguistics and to a survey of the

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[9] See also the papers in sections IV and V.

[10] The work is also referred to in the article "Philology" [reprinted in this section].

[11] Note that in *Language* (New York, 1921), p. 155 and p. 164, Sapir had used *Indo-Chinese* where he used *Sino-Tibetan* and *Sinitic* (see the article "Philology").

[12] On this encyclopedia article by Sapir, see Yakov Malkiel, "Sapir's Panoramic View of Recent Advances in Linguistics", in *General and Amerindian Ethnolinguistics: In Remembrance of Sanford Newman*, edited by Mary Ritchie Key and Henry M. Hoenigswald (Berlin/New York, 1989), 91–104. In the fourteenth edition [1929–1932], the article "Philology" was assigned to Otto Jespersen.

world's languages; this justifies the traditional heading "Philology" under which it appears in the *Encyclopaedia Britannica*. Sapir opens the article with a short statement on the progress of general linguistics (or "linguistic science"), referring to the manuals of Otto Jespersen, Joseph Vendryes and his own *Language*, all published in 1921–1922.[13]

Sapir then shows the relevance of linguistics for, and its ties with psychology, philosophy, sociology and anthropology. In the paragraph on psychology he mentions, without much sympathy,[14] behaviourism, but he welcomes the work of J.R. Kantor and of *Gestalt*psychology in general (which gives primary importance to systemic patterning).[15]

The paragraph on philosophy puts in evidence the work of Ogden and Richards, and stresses the methodological importance of adopting a relativistic stand[16] (illustrated in the appended paragraph on "Forms of speech"). Along the same lines, Sapir refers, in the paragraph on sociology and anthropology, to the cognate linguistic-anthropological work of Malinowski, showing the role of language as a "delimiter and index of social groups," as the medium of symbolic socialization. The crucial role of field work and text collection[17] is stressed by Sapir and is illustrated with a reference to Boas and Westermann.

The paragraph on sociology and anthropology prompts the transition to the study of language in its historical context. Primary evidence of this is found in the synchronic relics of place names (and ethnic names), a topic for linguistic folklore or paleontology (Sapir does not explicitly refer to the latter type of research).

The deeply historical nature of language forms the subject matter of historical linguistics, which Sapir presents to the readers of the *Encyclopaedia Britannica* in a few paragraphs, dealing with internal factors of change, consistency of change, external contacts; this provides an occasion to discuss some of his preferred themes, such as resistance to change (attested in Athabaskan),[18] drift,[19] the role of bilingualism,[20] and "convergences" in development.[21] The link between language

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13 See my "Note sur la linguistique générale en 1921–1922", *Beiträge zur Geschichte der Sprachwissenschaft* 1 (1991), 185–191.

14 See also the 1924 paper "The Grammarian and his Language" [reprinted in this section].

15 On Sapir's reception of *Gestalt*psychology, see Michael Cain, "Edward Sapir and Gestalt Psychology", *Anthropological Linguistics* 22 (1980), 141–150; and the rejoinder by Stephen Murray, "Sapir's Gestalt", *Anthropological Linguistics* 23 (1981), 8–12.

16 See also "The Grammarian and his Language" (1924), and the encyclopedia article "Language" (1933) [reprinted here in section VI].

17 See Regna Darnell, "Franz Boas, Edward Sapir and the Americanist Text Tradition", *Historiographia Linguistica* 17 (1990), 129–144.

18 See *Language* (New York, 1921), p. 209.

19 See *Language*, o.c., chapter VII, especially pp. 160–163, 165–166, 172–174, 182–184.

20 See the article "Language" of 1933 [reprinted here in section VI].

21 On this notion, see *Language* (New York, 1921), chapter IX (especially p. 213) and Antoine Meillet, "Convergence des développements linguistiques", *Revue philosophique* 85 (1918), 97–110 [reprinted in A. Meillet, *Linguistique historique et linguistique générale*, vol. I [Paris, 1921], pp. 61–75].

history and language geography is made in the paragraphs on language families[22] and on newly discovered languages (Tocharian[23] and Hittite[24] in the Indo-European field).

In between these historically slanted paragraphs there is a paragraph on morphological typology (summarizing the three typological parameters —types of concepts, technique and degree of synthesis— used by Sapir in his *Language*)[25] and on phonetics (Sapir stresses the importance of phonetics for field work, which crucially hinges on the quality of the field worker's ear; he also adds a few remarks on the geographical distribution of phonetic and tonal types).

"A Study in Phonetic Symbolism" explores, in an experimental way, a theoretical issue touched upon in "Language as a Form of Human Behavior" and in Sapir's review of Ogden and Richards. This paper deals with the expressive dimension of language (coexisting with the arbitrary or referential symbolic dimension). The paper reports on an experiment conducted by Sapir and aiming at revealing the "symbolic suggestiveness of sound contrasts" (p. 227) or intuition of unsocialized symbolisms (p. 239). The experiment involves psychological correlations between acoustic properties of sounds and material properties of supposed referents. The set-up of the experiment is described, and the methodological pitfalls are clearly defined (avoidance of association with actual words, avoidance of self-induced systematizations). The two major conclusions of the study are (a) the demonstration that on the range *a* → *i*, *a* has a greater potential magnitude symbolism than *i* (irrespective of the native language of the subject), (b) on the other hand, the linking of the perception of phonetic symbolic weight to the phonemic patterning of the subject's native language.

For this "unconscious" expressive, translinguistic symbolism (p. 235, pp. 238–239), Sapir sees two factors (which may interact): an acoustic and a kinaesthesic one. The role of both factors is briefly discussed (pp. 235–236). The final section of the paper reports on one part of the experiment calling for further exploration, viz. the factor of individual variation in the perception of phonetic symbolism and its association with referential properties.

Although this paper has obvious links with Sapir's work on patterning of sounds, and although it illustrates a psychological approach to language which

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[22] Sapir alludes to the possibility of transcending the genetic classifications set up by more conservative scholars; he also seems to refer with approval to Hermann Möller's attempt to link Indo-European and Semitic.

[23] Tocharian is rightly identified as having two dialects (now commonly referred to as Tocharian A and Tocharian B). For Sapir's study of Tocharian, see the relevant paper reprinted in volume II of *The Collected Works of Edward Sapir*.

[24] Sapir also mentions non-Indo-European Hattic ("older Hittite language") and the recently deciphered languages Lycian, Lydian and Carian.

[25] See *Language* (New York, 1921), chapter VI. In the article "Philology" Sapir explicitly rejects Nikolai Marr's attempt at establishing a parallelism between morphological types and cultural evolution. (For an implicit criticism, see *Language*, p. 234).

Sapir was clearly heading for from the late 1920s on, the topic was never taken up later by Sapir in a comprehensive general-linguistic study.[26]

The very concise paper "The Status of Linguistics as a Science" (1929) constitutes Sapir's second paper published in the journal *Language*. It offers a balanced synthesis of his linguistic work in the 1920s (especially of his publications in the period covered in this section, 1923–1929). Sapir's starting point is that 19th- and early 20th-century linguistics had acquired scientific status in the form of historical-comparative grammar, which rests on two basic notions, sound laws and analogical levelling. As noted by Sapir, these concepts had been fruitfully applied in the field of Indo-European and Semitic languages, and more recently in the field of African and American Indian[27] languages. The ultimate explanation for the principles of historical-comparative linguistics would have to be sought in sociology and psychology.[28]

Sapir then proceeds to show that linguistics is connected with other disciplines, and that it fulfills a central role in the study of social behaviour. This is due to the dialectic relationship between language and social reality: on the one hand, our cultural patterns are "indexed" in the language (p. 209),[29] and on the other hand, language is the symbolic guide to social reality (p. 209). The notion of "patterning" (or "configuration"), at the linguistic and cultural level, is recurrent throughout the paper (see especially pp. 212–214). In a central (and often quoted) passage of the paper we find an adumbration of the Sapir – Whorf hypothesis[30]: "Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the

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[26] It is a significant fact that in his article "Symbolism" written for the *Encyclopaedia of the Social Sciences*, vol. 14 (New York, 1934), pp. 492–495 [reprinted in *The Collected Works of Edward Sapir*, vol. III, pp. 319–325], Sapir hardly discusses phonetic symbolism.

[27] References are made to Leonard Bloomfield's work on Algonquian languages and Sapir's own work on Athabaskan; cf. Sapir's 1931 paper "The Concept of Phonetic Law as Tested in Primitive Languages by Leonard Bloomfield" [reprinted in section VI].

[28] See also Antoine Meillet, "L'état actuel des études de linguistique générale", *Revue des idées* 3 (1906) 296–308 [reprinted in A. Meillet, *Linguistique historique et linguistique générale*, vol. I [Paris, 1921], pp. 1–18].

[29] Sapir illustrates this with reference to domains of central interest to the historical linguist: linguistic paleontology and history of techniques (p. 210).

[30] On the antecedents and the posterity of the hypothesis, see John E. Joseph, "The Immediate Sources of the 'Sapir - Whorf Hypothesis'", *Historiographia Linguistica* 23 (1996), 365–404; E.F.K. Koerner, "Towards a Full 'Pedigree' of the Sapir - Whorf Hypothesis: From Locke to Lucy", in *Explorations in Linguistic Relativity*, edited by Martin Pütz and Marjolijn Verspoor (Amsterdam/Philadelphia, 2000), 1–24. On Whorf's view of linguistic relativity, see Penny Lee, *The Whorf Theory Complex: a Critical Reconstruction* (Amsterdam/Philadelphia, 1996). For an interesting linguistic-anthropological reformulation of the linguistic relativity hypothesis see John A. Lucy, *Language Diversity and Thought* (Cambridge, 1992) and *Grammatical Categories and Cognition* (Cambridge, 1992), and the volume *Rethinking Linguistic Relativity*, edited by John Gumperz and Stephen Levinson (Cambridge, 1996).

particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the 'real world' is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached [...] We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation" (p. 209, p. 210).

This paper, like most of Sapir's work in the years 1925–1933, throws a bridge between linguistics, sociology and psychology: linguistics is shown to be a necessary foundation for the sociologist (p. 210), who has to study its role in social symbolization, and for the psychologist (p. 211),[31] who has to study patterns of behaviour. As in the encyclopedia article "Philology" Sapir notes the relevance of *Gestalt*psychology for (structural) linguistics (see pp. 211–212). Also, the relationship of linguistics to philosophy is brought into the discussion: linguists can prevent philosophers from making naïve generalizations, and from formulating metaphysical abstractions on the basis of one's "own speech": the linguist — "by the very nature of his subject matter" "the most relativist [student]" of human behaviour (p. 212)— should make the philosopher aware of the relativity of linguistic symbolization,[32] especially since our symbols are subject to evaporation (cf. pp. 211–212). Linguistics, a key science for understanding social behaviour, connects with various other disciplines; it is, however, an autonomous science, which studies self-contained patterns (p. 212): this is a theme which Sapir repeatedly dealt with in the 1920s, more specifically under the heading "the formal completeness of language."

At the end of the paper Sapir addresses the question what kind of science linguistics is.[33] Whereas some of its aspects (e.g., phonetic description) belong within the natural sciences, and other pertain to biology (when defined as the science of the "free" development of natural organisms), there can be no doubt for Sapir that linguistics, which studies language as a cultural and social product, belongs to the social sciences; within this field, it has direct relevance for psychology.

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[31] Sapir refers to behaviouristic psychology in its application to language (the concept of "response situation" (as a substitutive stimulus, see p. 211) was later elaborated upon by Leonard Bloomfield in his *Language* (New York, 1933), pp. 23–24, 139–144.

[32] See also Sapir's review of Ogden and Richards's *The Meaning of Meaning* [1923, included in this volume].

[33] This problem had been insightfully discussed at the end of the 19th century by the French linguist Victor Henry [1850–1907] in his *Antinomies linguistiques* (Paris, 1896).

sociology, and anthropology. And Sapir admonishes linguists to integrate their work within the "interpretation of human conduct in general" (p. 214). As he observes, linguistics is endowed with a crucial role[34] in the elaboration of a general methodology for the social sciences.

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[34] One should note that this is partly owing to the fact that its object, language, shows regularities similar to those observed in the natural sciences (p. 213).

AN APPROACH TO SYMBOLISM

[572a] A MACHINE is something which a man introduces to his fellow-men in order to make things easier, more agreeable, or more worth while for them, for himself, or for some third, generally unstipulated, party. It is understood, when a new machine is brought up for our acceptance, that we have been sadly hampered up to that point by the necessity of putting in more time and energy in a given pursuit, such as striking a light, moving from A to B, or discovering our opinion about something, than is advisable in the nature of things; that the machine is a humble slave who would like to cut down this serious expenditure of time and energy; and that, accepting the machine's services, we at once proceed to read Shakespeare and to make other explorations into the higher life. But the automobile, a labour-saving contrivance of obscure intention, insists on the cross-country spin, on getting itself exhibited, and on divers attentions not mentioned in the bond. It saves us five minutes in order that it may dictate the schedule for five hours. It translates our regret that Shakespeare is inaccessible to-day into the impossibility of touching Shakespeare for another month at the least. The tyranny of incidental services should be the one obsession of social reformers.

Of all insidious machines, words are the most insidious. Like the humblest of kitchen help they worm themselves into our good-natured, patronizing confidence and have us at their mercy before we realize that their almost indispensable usefulness has grooved our minds into an infinite tracery of habit. We begin by coining or adapting words for such symbolic uses as the shifting needs and conveniences of custom require. The old need and the old convenience may be left behind for good and all, but the words which once gave them a habitation we do not readily relinquish. They tend to remain as landmarks in a vast but finite and wellnigh inflexible world of symbols, housing new needs and new conveniences, enlarging or contracting their hospitality, yet always mysteriously themselves. Their hypnotized creators have no recourse but to pronounce them sanctuaries and to look anxiously for the divinity that must dwell in each of them. Who has not asked himself the agonizing question, "What does this word *really mean*?"

[572b] Every intelligent person knows that words delude as much as they help. Many a heated argument, many a difference of philosophical attitude seems to resolve itself into variously preferred emphases on this or that facet of a word's customary surface-range of significance. Unfortunately for rigorous thinking, this significance is only in part a coldly symbolic reference to the world of experience; more often than not, it also embodies emotive elements that have no place in the objectively verifiable context of things. And yet few accept with due cheer and conviction the notorious failure of a given universe of speech-symbols, a language, to correspond to the universe of phenomena, physical and mental. It is

distressing to have two remorseless and even humorous English thinkers[1] discover for us not only sixteen types of aesthetic theory based on as many kinds of definition of the beautiful, but no less than sixteen appreciably distinct ways of understanding the term "meaning."

Messrs. Ogden and Richards are no mere sophists, no clever hair-splitters. It is doubtful if the essential limitations of speech have ever been more vividly, yet sympathetically, realized than in their radical study of symbolism. They make it clear, as no philologist has ever quite made it clear, why an understanding of the nature of speech is a philosophic essential, why every epistemology and every system of logic that does not subject speech, its necessary expressive medium, to a searching critique is built upon the sands, is sooner or later snared in the irrelevances of the medium. Philosophers and psychologists, most of them, have had little patience with the ways of speech. They have either dismissed it as a by-product of human behaviour, as an adventitious code that only grammarians need be seriously interested in, or they have seen in it but a conveniently externalizing expression, an adequate symbolic complement, of a mental life that is open to direct observation. They have been either blindly disdainful or blindful trustful. Profounder insights into the normative influence of speech are not absent from philosophic and linguistic literature—see Fritz Mauthner's little-known "Kritik der Sprachwissenschaft"—but they have been slightly regarded. "The Meaning of Meaning" is written from the angle of the logician and the psychologist rather than from that of the linguist. It seems more than usually significant, therefore, that the writers have gone so fully into the linguistic factors which are involved in the puzzling processes known as thought and interpretation.

The originality of "The Meaning of Meaning" lies chiefly in this, that it refuses to see a special relation between symbol and "referent" or thing (event) symbolized; further, that it looks upon thinking as the interpreting of "signs," which interpreting is merely the psychological reaction to the "sign" in the light of past and present experience. A "door" may be a thing thought of or referred to, what the authors call a "referent," but it may also be an indication of some other thing or some event or some attitude that has been or is linked with it in a context, physical or psychological or both. In the latter case the "door" (not merely the written or heard symbol "door," but the thought of the door, whether imaged or not) becomes a "sign" or natural symbol for a "referent," such as house or opening or banging or entry into the dining room or whatever else its particular context and direction of reference lead us to. Symbols, as ordinarily understood, are the "signs" of thoughts or references (sign-interpretations) and are "causally" related, in psychological contexts, to these references somewhat as the sign-interpretations themselves are related, again "causally," to the "referents." The relation

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[1] "The Meaning of Meaning: a Study of the Influence of Language upon Thought and of the Science of Symbolism." C. K. Ogden and I. A. Richards. New York: Harcourt, Brace and Co. $3.75

between a symbol (say, the word "door") and a referent (say, a door or this [573a] door) is merely imputed, even fictitious. The thought of Messrs. Ogden and Richards is as simple as it is difficult to grasp. It looks away not only from the universals of the realist, but from the more innocent "concepts" (abstracted shorthand references) of the conceptualist and orthodox linguist as well. It puts its faith to the closest possible psychological scrutiny of experienced contexts and feels its way with the canniest of "canons of symbolization."

New sciences are adumbrated in this book. They are a general theory of signs (a psychological approach to the problems of epistemology); a theory of symbolism; and, as the most important special development of a general theory of symbolism, a broader theory of language than the philologists have yet attempted. In an admirable chapter on "Symbol Situations" the writers make it abundantly clear that language is only in part a coherent system of symbolic reference. To a far greater extent than is generally realized language serves also as affective and volitional purposes. Perhaps a criticism may be ventured at this point. It is true that the *function* of language is not in practice a purely symbolic or referential one, but is it not a highly significant fact, none the less, that its *form* is so essentially of symbolic pattern? Most students of language, aside from somewhat naive teleologists like Professor Jespersen, are inclined to be more interested in the form than in the function of speech, but, as Messrs. Ogden and Richards might reflect, that is perhaps their private weakness. In any event, the psychology of the varying, yet eventually equivalent, forms of linguistic expression is a fascinating subject. Little of real importance seems yet to have been said about it.

EDWARD SAPIR

Editorial Note

The Freeman 7 (1923), 572–573.

THE GRAMMARIAN AND HIS LANGUAGE*

THE NORMAL MAN of intelligence has something of a contempt for linguistic studies, convinced as he is that nothing can well be more useless. Such minor usefulness as he concedes to them is of a purely instrumental nature. French is worth studying because there are French books which are worth reading. Greek is worth studying—if it is—because a few plays and a few passages of verse, written in that curious and extinct vernacular, have still the power to disturb our hearts—if indeed they have. For the rest, there are excellent translations.

Now it is a notorious fact that the linguist is not necessarily deeply interested in the abiding things that language has done for us. He handles languages very much as the zoölogist handles dogs. The zoologist examines the dog carefully, then he dissects him in order to examine him still more carefully, and finally, noting resemblances between him and his cousins, the wolf and the fox, and differences between him and his more distant relations like the cat and the bear, he assigns him his place in the evolutionary scheme of animated nature, and has done. Only as a polite visitor, not as a zoölogist, is he even mildly interested in Towzer's sweet parlor tricks, however fully he may recognize the fact that these tricks could never have evolved unless the dog had evolved first. To return to the philologist and the layman by whom he is judged, it is a precisely parallel indifference to the beauty wrought by the instrument which nettles the judge. And yet the cases are not altogether parallel. When Towzer has performed his tricks and when Porto has saved the drowning man's life, they relapse, it is true, into the status of mere dog—but even the zoölogist's dog is of interest to all of us. But when Achilles has bewailed the death of his beloved Patroclus and Clytaemnestra has done her worst, what are we to do with the Greek aorists that are left on our hands? There is a traditional mode of procedure which arranges them into patterns. It is called grammar. The man who is in charge of grammar and is called a grammarian is regarded by all plain men as a frigid and dehumanized pedant.

It is not difficult to understand the very pallid status of linguistics in America. The purely instrumental usefulness of language study is recognized, of course, but there is not and cannot be in this country that daily concern with foreign modes of expression so natural on the continent of Europe, where a number of languages jostle each other in

* *American Mercury*, 1 (1924): 149–155.

everyday life. In the absence of a strong practical motive for linguistic pursuits the remoter, more theoretical, motives are hardly given the opportunity to flower. But it would be a profound mistake to ascribe our current indifference to philological matters entirely to the fact that English alone does well enough for all practical purposes. There is something about language itself, or rather about linguistic differences, that offends the American spirit. That spirit is rationalistic to the very marrow of its bone. Consciously, if not unconsciously, we are inclined to impatience with any object or idea or system of things which cannot give a four-square reckoning of itself in terms of reason and purpose. We can see this spirit pervading our whole scientific outlook. [150] If psychology and sociology are popular sciences in America today, that is mainly due to the prevailing feeling that they are convertible into the cash value of effective education, effective advertising, and social betterment. Even here, there is, to an American, something immoral about a psychological truth which will not do pedagogical duty, something wasteful about a sociological item which can be neither applied nor condemned. If we apply the rationalistic test to language, it is found singularly wanting. After all, language is merely a level to get thoughts "across." Our business instinct tells us that the multiplication of levers, all busy on the same job, is poor economy. Thus one way of "spitting it out" is as good as another. If other nationalities find themselves using other levers, that is their affair. The fact of language, in other words, is an unavoidable irrelevance, not a problem to intrigue the inquiring mind.

There are two ways, it seems, to give linguistics its requisite dignity as a science. It may be treated as history or it may be studied descriptively and comparatively as form. Neither point of view augurs well for the arousing of American interest. History has always to be something else before it is taken seriously. Otherwise it is "mere" history. If we could show that certain general linguistic changes are correlated with stages of cultural evolution, we would come appreciably nearer securing linguistics a hearing, but the slow modifications that eat into the substance and the form of speech and that gradually remold it entirely do not seem to run parallel to any scheme of cultural evolution yet proposed. Since "biological" or evolutionary history is the only kind of history for which we have a genuine respect, the history of language is left out in the cold as another one of those unnecessary sequences of events which German erudition is in the habit of worrying about.

But before pinning our faith to linguistics as an exploration into

form, we might cast an appealing glance at the psychologist, for he is likely to prove a useful ally. He has himself looked into the subject of language, which he finds to be a kind of "behavior," a rather specialized type of functional adaptation, yet not so specialized but that it may be declared to be a series of laryngeal habits. We may go even further, if we select the right kind of psychologist to help us, and have thought put in its place as a merely "subvocal laryngeating." If these psychological contributions to the nature of speech do not altogether explain the Greek aorists bequeathed to us by classical poets, they are at any rate very flattering to philology. Unfortunately the philologist cannot linger long with the psychologist's rough and ready mechanisms. These may make shift for an introduction to his science, but his real problems are such as few psychologists have clearly envisaged, though it is not unlikely that psychology may have much to say about them when it has gained strength and delicacy. The psychological problem which most interests the linguist is the inner structure of language, in terms of unconscious psychic processes, not that of the individual's adaptation to this traditionally conserved structure. It goes without saying, however, that the two problems are not independent of each other.

To say in so many words that the noblest task of linguistics is to understand languages as form rather than as function or as historical process is not to say that it can be understood as form alone. The formal configuration of speech at any particular time and place is the result of a long and complex historical development, which, in turn, is unintelligible without constant reference to functional factors. Form is even more liable to be stigmatized as "mere" than the historical process which shapes it. For our characteristically pragmatic American attitude forms in themselves seem to have little or no reality, and it is for this [85] reason that we so often fail to divine them or to realize into what new patterns ideas and institutions are balancing themselves or tending to do so. Now it is very probable that the poise which goes with culture is largely due to the habitual appreciation of the formal outlines and the formal intricacies of experience. Where life is tentative and experimental, where ideas and sentiments are constantly protruding gaunt elbows out of an inherited stock of meagre, inflexible patterns instead of graciously bending them to their own uses, form is necessarily felt as a burden and a tyranny instead of the gentle embrace it should be. Perhaps it is not too much to say that the lack of culture in America is in some way responsible for the unpopularity of linguistic studies, for these demand at one and the same time an intense appreciation of a

given form of expression and a readiness to accept a great variety of possible forms.

The outstanding fact about any language is its formal completeness. This is as true of a primitive language, like Eskimo or Hottentot, as of the carefully recorded and standardized languages of our great cultures. By "formal completeness" I mean a profoundly significant peculiarity which is easily overlooked. Each language has a well defined and exclusive phonetic system with which it carries on its work and, more than that, all of its expressions, from the most habitual to the merely potential, are fitted into a deft tracery of prepared forms from which there is no escape. These forms establish a definite relational feeling or attitude towards all possible contents of expression and, through them, towards all possible contents of experience, in so far, of course, as experience is capable of expression in linguistic terms. To put this matter of the formal completeness of speech in somewhat different words, we may say that a language is so constructed that no matter what any speaker of it may desire to communicate, no matter how original or bizarre his idea or his fancy, the language is prepared to do his work. He will never need to create new forms or to force upon his language a new formal orientation—unless, poor man, he is haunted by the form-feeling of another language and is subtly driven to the unconscious distortion of the one speech-system on the analogy of the other. The world of linguistic forms, held within the framework of a given language, is a complete system of reference, very much as a number system is a complete system of quantitative reference or as a set of geometrical axes of coördinates is a complete system of reference to all points of a given space. The mathematical analogy is by no means as fanciful as it appears to be. To pass from one language to another is psychologically parallel to passing from one geometrical system of reference to another. The environing world which is referred to is the same for either language; the world of points is the same in either frame of reference. But the formal method of approach to the expressed item of experience, as to the given point of space, is so different that the resulting feeling of orientation can be the same neither in the two languages nor in the two frames of reference. Entirely distinct, or at least measurably distinct, formal adjustments have to be made and these differences have their psychological correlates.

Formal completeness has nothing to do with the richness or the poverty of the vocabulary. It is sometimes convenient or, for practical reasons, necessary for the speakers of a language to borrow words from foreign sources as the range of their experience widens. They may

extend the meanings of words which they already possess, create new words out of native resources on the analogy of existing terms, or take over from another people terms to apply to the new conceptions which they are introducing. None of these processes affects the form of the language, any more than the enriching of a certain portion of space by the introduction of new objects affects the geometrical form of that region as defined by an accepted mode of reference. It would be absurd to say that Kant's [152] "Critique of Pure Reason" could be rendered forthwith into the unfamiliar accents of Eskimo or Hottentot, and yet it would be absurd in but a secondary degree. What is really meant is that the culture of these primitive folk has not advanced to the point where it is of interest to them to form abstract conceptions of a philosophical order. But it is not absurd to say that there is nothing in the formal peculiarities of Hottentot or of Eskimo which would obscure the clarity or hide the depth of Kant's thought—indeed, it may be suspected that the highly synthetic and periodic structure of Eskimo would more easily bear the weight of Kant's terminology than his native German. Further, to move to a more positive vantage point, it is not absurd to say that both Hottentot and Eskimo possess all the formal apparatus that is required to serve as matrix for the expression of Kant's thought. If these languages have not the requisite Kantian vocabulary, it is not the languages that are to be blamed but the Eskimo and the Hottentots themselves. The languages as such are quite hospitable to the addition of a philosophic load to their lexical stock-in-trade.

The unsophisticated natives, having no occasion to speculate on the nature of causation, have probably no word that adequately translates our philosophic term "causation," but this shortcoming is purely and simply a matter of vocabulary and of no interest whatever from the standpoint of linguistic form. From this standpoint the term "causation" is merely one out of an indefinite number of examples illustrating a certain pattern of expression. Linguistically—in other words, as regards form-feeling—"causation" is merely a particular way of expressing the notion of "act of causing," the idea of a certain type of action conceived of as a thing, an entity. Now the form-feeling of such a word as "causation" is perfectly familiar to Eskimo and to hundreds of other primitive languages. They have no difficulty in expressing the idea of a certain activity, say "laugh" or "speak" or "run," in terms of an entity, say "laughter" or "speech" or "running." If the particular language under consideration cannot readily adapt itself to this type of expression, what it can do is to resolve all contexts in which such forms

are used in other languages into other formal patterns that eventually do the same work. Hence, "laughter is pleasurable," "it is pleasant to laugh," "one laughs with pleasure," and so on *ad infinitum*, are functionally equivalent expressions, but they canalize into entirely distinct form-feelings. All languages are set to do all the symbolic and expressive work that language is good for, either actually or potentially. The formal technique of this work is the secret of each language.

It is very important to get some notion of the nature of this form-feeling, which is implicit in all language, however bewilderingly at variance its actual manifestations may be in different types of speech. There are many knotty problems here—and curiously elusive ones—that it will require the combined resources of the linguist, the logician, the psychologist, and the critical philosopher to clear up for us. There is one important matter that we must now dispose of. If the Eskimo and the Hottentot have no adequate notion of what we mean by causation, does it follow that their languages are incapable of expressing the causative relation? Certainly not. In English, in German, and in Greek we have certain formal linguistic devices for passing from the primary act or state to its causative correspondent, e.g., English *to fall*, *to fell*, "to cause to fall"; *wide*, *to widen;* German *hangen*, "to hang, be suspended"; *hängen*, "to hang, cause to be suspended"; Greek *pherō*, "to carry"; *phoreō*, "to cause to carry." Now this ability to feel and express the causative relation is by no manner of means dependent on an ability to conceive of causality as such. The latter ability is conscious and intellectual in character; it is laborious, like most conscious processes, and it is late in developing. The former ability is unconscious and nonintellectual in character, exercises itself [153] with great rapidity and with the utmost ease, and develops early in the life of the race and of the individual. We have therefore no theoretical difficulty in finding that conceptions and relations which primitive folk are quite unable to master on the conscious plane are being unconsciously expressed in their languages—and, frequently, with the utmost nicety. As a matter of fact, the causative relation, which is expressed only fragmentarily in our modern European languages, is in many primitive languages rendered with an absolutely philosophic relentlessness. In Nootka, an Indian language of Vancouver Island, there is no verb or verb form which has not its precise causative counterpart.

Needless to say, I have chosen the concept of causality solely for the sake of illustration, not because I attach an especial linguistic importance to it. Every language, we may conclude, possesses a complete and

psychologically satisfying formal orientation, but this orientation is only felt in the unconscious of its speakers—is not actually, that is, consciously, known by them.

Our current psychology does not seem altogether adequate to explain the formation and transmission of such submerged formal systems as are disclosed to us in the languages of the world. It is usual to say that isolated linguistic responses are learned early in life and that, as these harden into fixed habits, formally analogous responses are made, when the need arises, in a purely mechanical manner, specific precedents pointing the way to new responses. We are sometimes told that these analogous responses are largely the result of reflection on the utility of the earlier ones, directly learned from the social environment. Such methods of approach see nothing in the problem of linguistic form beyond what is involved in the more and more accurate control of a certain set of muscles towards a desired end, say the hammering of a nail. I can only believe that explanations of this type are seriously incomplete and that they fail to do justice to a certain innate striving for formal elaboration and expression and to an unconscious patterning of sets of related elements of experience.

The kind of mental processes that I am now referring to are, of course, of that compelling and little understood sort for which the name "intuition" has been suggested. Here is a field which psychology has barely touched but which it cannot ignore indefinitely. It is precisely because psychologists have not greatly ventured into these difficult reaches that they have so little of interest to offer in explanation of all those types of mental activity which lead to the problem of form, such as language, music, and mathematics. We have every reason to surmise that languages are the cultural deposits, as it were, of a vast and self-completing network of psychic processes which still remain to be clearly defined for us. Probably most linguists are convinced that the language-learning process, particularly the acquisition of a feeling for the formal set of the language, is very largely unconscious and involves mechanisms that are quite distinct in character from either sensation or reflection. There is doubtless something deeper about our feeling for form than even the majority of art theorists have divined, and it is not unreasonable to suppose that, as psychological analysis becomes more refined, one of the greatest values of linguistic study will be in the unexpected light it may throw on the psychology of intuition, this "intuition" being perhaps nothing more nor less than the "feeling" for relations.

There is no doubt that the critical study of language may also be of

the most curious and unexpected helpfulness to philosophy. Few philosophers have deigned to look into the morphologies of primitive languages nor have they given the structural peculiarities of their own speech more than a passing and perfunctory attention. When one has the riddle of the universe on his hands, such pursuits seem trivial enough, yet when it begins to be [154] suspected that at least some solutions of the great riddle are elaborately roundabout applications of the rules of Latin or German or English grammar, the triviality of linguistic analysis becomes less certain. To a far greater extent than the philosopher has realized, he is likely to become the dupe of his speech-forms, which is equivalent to saying that the mould of his thought, which is typically a linguistic mould, is apt to be projected into his conception of the world. Thus innocent linguistic categories may take on the formidable appearance of cosmic absolutes. If only, therefore, to save himself from philosophic verbalism, it would be well for the philosopher to look critically to the linguistic foundations and limitations of his thought. He would then be spared the humiliating discovery that many new ideas, many apparently brilliant philosophic conceptions, are little more than rearrangements of familiar words in formally satisfying patterns. In their recently published work on "The Meaning of Meaning" Messrs. Ogden and Richards have done philosophy a signal service in indicating how readily the most hardheaded thinkers have allowed themselves to be cajoled by the formal slant of their habitual mode of expression. Perhaps the best way to get behind our thought processes and to eliminate from them all the accidents or irrelevances due to their linguistic garb is to plunge into the study of exotic modes of expression. At any rate, I know of no better way to kill spurious "entities."

This brings us to the nature of language as a symbolic system, a method of referring to all possible types of experience. The natural or, at any rate, the naïve thing is to assume that when we wish to communicate a certain idea or impression, we make something like a rough and rapid inventory of the objective elements and relations involved in it, that such an inventory or analysis is quite inevitable, and that our linguistic task consists merely of the finding of the particular words and groupings of words that correspond to the terms of the objective analysis. Thus, when we observe an object of the type that we call a "stone" moving through space towards the earth, we involuntarily analyze the phenomenon into two concrete notions, that of a stone and that of an act of falling, and, relating these two notions to each other by certain formal methods proper to English, we declare that "the

stone falls." We assume, naïvely enough, that this is about the only analysis that can properly be made. And yet, if we look into the way that other languages take to express this very simple kind of impression, we soon realize how much may be added to, subtracted from, or rearranged in our own form of expression without materially altering our report of the physical fact.

In German and in French we are compelled to assign "stone" to a gender category—perhaps the Freudians can tell us why this object is masculine in the one language, feminine in the other; in Chippewa we cannot express ourselves without bringing in the apparently irrelevant fact that a stone is an inanimate object. If we find gender beside the point, the Russians may wonder why we consider it necessary to specify in every case whether a stone, or any other object for that matter, is conceived in a definite or an indefinite manner, why the difference between "the stone" and "a stone" matters. "Stone falls" is good enough for Lenin, as it was good enough for Cicero. And if we find barbarous the neglect of the distinction as to definiteness, the Kwakiutl Indian of British Columbia may sympathize with us but wonder why we do not go a step further and indicate in some way whether the stone is visible or invisible to the speaker at the moment of speaking and whether it is nearest to the speaker, the person addressed, or some third party. "That would no doubt sound fine in Kwakiutl, but we are too busy!" And yet we insist on expressing the singularity of the falling object, where the Kwakiutl Indian, differing from the Chippewa, can generalize and make a statement which would apply [155] equally well to one or several stones. Moreover, he need not specify the time of the fall. The Chinese get on with a minimum of explicit formal statement and content themselves with a frugal "stone fall."

These differences of analysis, one may object, are merely formal; they do not invalidate the necessity of the fundamental concrete analysis of the situation into "stone" and what the stone does, which in this case is "fall." But this necessity, which we feel so strongly, is an illusion. In the Nootka language the combined impression of a stone falling is quite differently analyzed. The stone need not be specifically referred to, but a single word, a verb form, may be used which is in practice not essentially more ambiguous than our English sentence. This verb form consists of two main elements, the first indicating general movement or position of a stone or stonelike object, while the second refers to downward direction. We can get some hint of the feeling of the Nootka word if we assume the existence of an intransitive verb "to stone," referring to the position or movement of a stonelike object.

Then our sentence, "The stone falls," may be reassembled into something like "It stones down." In this type of expression the thing-quality of the stone is implied in the generalized verbal element "to stone," while the specific kind of motion which is given us in experience when a stone falls is conceived as separable into a generalized notion of the movement of a class of objects and a more specific one of direction. In other words, while Nootka has no difficulty whatever in describing the fall of a stone, it has no verb that truly corresponds to our "fall."

It would be possible to go on indefinitely with such examples of incommensurable analyses of experience in different languages. The upshot of it all would be to make very real to us a kind of relativity that is generally hidden from us by our naïve acceptance of fixed habits of speech as guides to an objective understanding of the nature of experience. This is the relativity of concepts or, as it might be called, the relativity of the form of thought. It is not so difficult to grasp as the physical relativity of Einstein nor is it as disturbing to our sense of security as the psychological relativity of Jung, which is barely beginning to be understood, but it is perhaps more readily evaded than these. For its understanding the comparative data of linguistics are a *sine qua non*. It is the appreciation of the relativity of the form of thought which results from linguistic study that is perhaps the most liberalizing thing about it. What fetters the mind and benumbs the spirit is ever the dogged acceptance of absolutes.

To a certain type of mind linguistics has also that profoundly serene and satisfying quality which inheres in mathematics and in music and which may be described as the creation out of simple elements of a self-contained universe of forms. Linguistics has neither the sweep nor the instrumental power of mathematics, nor has it the universal aesthetic appeal of music. But under its crabbed, technical, appearance there lies hidden the same classical spirit, the same freedom in restraint, which animates mathematics and music at their purest. This spirit is antagonistic to the romanticism which is rampant in America today and which debauches so much of our science with its frenetic desire.

Editorial Note

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Les Langues du Monde, par un groupe de linguistes sous la direction de A. Meillet et March Cohen (Collection Linguistique publiée par la Société <de> Linguistique de Paris, XVI; Paris, Librairie Ancienne Edouard Champion, 1924. 811 pp., 18 plates of maps)

[373] To the tireless energies of Prof. A. Meillet, the distinguished Indo-Europeanist, we owe this admirable review of the languages of the world. The work could hardly have been undertaken except as here planned and carried out, that is, by a number of linguistic specialists. It is true that works of a similar nature, such as Friedrich Müller's *Grundriss der Sprachwissenschaft* and A. Trombetti's *Elementi di Glottologia*, have been written by individual scholars, but, on the whole, it was probably wise to sacrifice something of unity of treatment to the greater authoritativeness that was bound to result from a division of labor.

The parts into which the book falls are: an Introduction, by A. Meillet; Indo-European, by J. Vendryes; Hamito-Semitic, by Marcel Cohen (it is with great satisfaction that one sees a conservative book of this type recognizing the fundamental points of accord that have long been pointed out between Semitic and "Hamitic" to the point of frankly uniting them into a single genetic group); Finno-Ugrian and Samoyed, by A. Sauvageot; Turkish, Mongol, and Tungusic Languages, by J. Deny; Japanese; Corean; Ainu; "Hyperborean" Languages (i.e., Chukchee, Yukagir, and Gilyak), all four by S. Élisséev; Special Languages of the Ancient Near East (particularly Sumerian, Elamite, Hittite, Lydian, and Etruscan), by C. Autran; Basque, by George Lacombe; Northern Caucasic Languages, by N. Troubetzkoy; Southern Caucasic Languages, by A. Meillet; Dravidian, by Jules Bloch; Sino-Tibetan, by J. Przyluski (this term is much to be preferred to the misleading "Indo-Chinese" that has been current; "Sinic" is perhaps even better); Austroasiatic Languages (Mon-Khmer, Annamite, and Mundâ), by J. Przyluski; Malayo-Polynesian, by Gabriel Ferrand (Papuan Languages, which do not properly belong here, are briefly treated at the end of this section); Australian Languages, by A. Meillet; Languages of the Soudan and of Guinea, by Maurice Delafosse; Bantu, by Miss L. Homburger; Bushman and Hottentot, by Miss L. Homburger; **[374]** and American Languages, by P. Rivet. There is an adequate equipment of bibliographies and maps and an excellent index. All in all, the book is an achievement and no serious student of general linguistics or descriptive anthropology can afford to do without it. That it will need to be replaced by another work of similar scope in a few decades goes without saying (certain of its paragraphs became antiquated in the writing !) but for the present it is indispensable.

Just because this work is so precious for the linguist it will not seem ungracious if we point out certain shortcomings. In the first place a number of important languages have slipped out from under the specialists. The editors and their staff will be chagrined to discover that the Andaman group, which includes a considerable number of quite distinct dialects or languages, and the isolated Siberian group to which belong "Yenissei Ostyak" (to be carefully distinguished from the Ugro-Finnic "Ostyak" and from the "Ostyak" dialect of Samoyed) and Kott are entire-

ly omitted. Both of these isolated families are treated in considerable detail in Trombetti's *Elementi* and both are of crucial importance for the early linguistic history of Asia. Trombetti produces some evidence, by no means to be despised, which tends to connect the Yenissei Ostyak group with Sino-Tibetan. A mere glance at F. N. Finck's useful little *Sprachstämme des Erdkreises* would have insured at least a mention of the two groups. A more excusable omission is that of Zandawe, a language recently discovered in east central Africa and showing unmistakable resemblances to the Bushman and Hottentot languages far to the south (see Trombetti). The historical importance of this language is obvious.

A second and probably more serious criticism is the lack of a consistent plan in the treatment of the various sections. Mechanical uniformity was rightly rejected by the editors, but they have gone to the opposite extreme. As it is, certain languages or groups of languages receive an altogether disproportionate share of attention. In some sections a good deal of useful information is given on the morphology of the languages listed, in others there is considerable detail of a bibliographical and geographical nature but no vitalizing hints as to the nature of the languages themselves, in still others a vast field is dismissed with a few perfunc-[375]tory remarks and a shrug of the shoulders. The editors cannot honestly retort that they have had to omit all grammatical discussion where none is given in the book because of the scantiness of the data. As a matter of fact, the descriptive material available in many such cases is of a very high order of merit. There would have been no more essential difficulty, for instance, in giving some elementary idea of Algonkin or Siouan or Athabaskan or Maya structure than of Hottentot or Polynesian structure and such indications would have added immeasurably to the value of the work, which now hovers uncertainly between the geographical listing of groups and sub-groups and the morphological discussion of languages. The ideal method would probably have been to combine the two, as in the admirable section on Hamito-Semitic, which could well have spared, on the other hand, a great deal of its rather irrelevant historical detail.

One other point. It was cruel to assign the vast field of American Indian languages to a single specialist. No one person living today could even begin to get his bearings in it, let alone do justice to it. It might have been necessary for the editors to go outside of France and to secure the coöperation of at least one specialist for North America north of Mexico and another for Mexico and Central America, leaving the South American field in the hands of M. Rivet, who is obviously the one best qualified to handle it. If it was the intention of the editors to show how well an essentially international task could be carried out with the splendid resources of French scholarship alone, all we can say is that they must be congratulated on coming as near solving an impossible task as it was reasonably possible to do.

Ottawa, Ont. E. SAPIR.

Editorial Note

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SOUND PATTERNS IN LANGUAGE

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There used to be and to some extent still is a feeling among linguists that the psychology of a language is more particularly concerned with its grammatical features, but that its sounds and its phonetic processes belong to a grosser physiological substratum. Thus, we sometimes hear it said that such phonetic processes as the palatalizing of a vowel by a following *i* or other front vowel ("umlaut") or the series of shifts in the manner of articulating the old Indo-European stopped consonants which have become celebrated under the name of "Grimm's Law" are merely mechanical processes, consummated by the organs of speech and by the nerves that control them as a set of shifts in relatively simple sensorimotor habits. It is my purpose in this paper, as briefly as may be, to indicate that the sounds and sound processes of speech cannot be properly understood in such simple, mechanical terms.

Perhaps the best way to pose the problem of the psychology of speech sounds is to compare an actual speech sound with an identical or similar one not used in a linguistic context. It will become evident almost at once that it is a great fallacy to think of the articulation of a speech sound as a motor habit that is merely intended to bring about a directly significant result. A good example of superficially similar sounds is the *wh* of such a word as *when*, as generally pronounced in America (i.e., voiceless *w* or, perhaps more accurately analyzed, aspiration plus voiceless *w* plus voiced *w*-glide), and the sound made in blowing out a candle, with which it has often been compared. We are not at the present moment greatly interested in whether these two articulations are really identical or, at the least, very similar. Let us assume that a typically pronounced *wh* is identical with the sound that results from the expulsion of breath through pursed lips when a candle is blown out. We shall assume identity of both articulation and quality of perception. Does this identity amount to a psychological identity of the two processes? Obviously not. It is worth pointing out, in what may seem pedantic detail, wherein they differ.

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1. The candle-blowing sound is a physical by-product of a directly functional act, the extinguishing of the candle by means of a peculiar method of producing a current of air. So far as normal human interest is concerned, this sound serves merely as a sign of the blowing out, or attempted blowing out, itself. We can abbreviate our record of the facts a little and say that the production of the candle-blowing sound is a directly functional act. On the other hand, the articulation of the *wh*-sound in such a word as *when* has no direct functional value; it is merely a link in the construction of a symbol, the articulated or perceived word *when*, which in turn assumes a function, symbolic at that, only when it is experienced in certain linguistic contexts, such as the saying or hearing of a sentence like *When are you coming?* In brief, the candle-blowing *wh* means business; the speech sound *wh* is stored-up play which can eventually fall in line in a game that merely refers to business. Still more briefly, the former is practice; the latter, art.

2. Each act of blowing out a candle is functionally equivalent, more or less, to every other such act; hence the candle-blowing *wh* is, in the first instance, a sign for an act of single function. The speech sound *wh* has no singleness, or rather primary singleness, of reference. It is a counter in a considerable variety of functional symbols, e.g. *when*, *whiskey*, *wheel*. A series of candle-blowing sounds has a natural functional and contextual coherence. A series of *wh*-sounds as employed in actual speech has no such coherence; e.g., the series *wh*(*en*), *wh*(*iskey*), *wh*(*eel*) is non-significant.

3. Every typical human reaction has a certain range of variation and, properly speaking, no such reaction can be understood except as a series of variants distributed about a norm or type. Now the candle-blowing *wh* and the speech sound *wh* are norms or types of entirely distinct series of variants.

First, as to acoustic quality. Owing to the fact that the blowing out of a candle is a purely functional act, its variability is limited by the function alone. But, obviously, it is possible to blow out a candle in a great number of ways. One may purse the lips greatly or only a little; the lower lip, or the upper lip, or neither may protrude; the articulation may be quite impure and accompanied by synchronous articulations, such as a *x*-like (velar spirant) or *sh*-like sound. None of these and other variations reaches over into a class of reactions that differs at all materially from the typical candle-blowing *wh*. The variation of *wh* as speech sound is very much more restricted. A *when* pronounced,

for instance, with a *wh* in which the lower lip protruded or with a *wh* that was contaminated with a *sh*-sound would be felt as distinctly "off color." It could be tolerated only as a joke or a personal speech defect. But the variability of *wh* in language is not only less wide than in candle-blowing, it is also different in tendency. The latter sound varies chiefly along the line of exact place (or places) of articulation, the former chiefly along the line of voicing. Psychologically *wh* of *when* and similar words is related to the *w* of *well* and similar words. There is a strong tendency to minimize the aspiration and to voice the labial. The gamut of variations, therefore, runs roughly from *hW* (I use *W* for voiceless *w*) to *w*. Needless to say, there is no tendency to voicing in the candle-blowing *wh*, for such a tendency would contradict the very purpose of the reaction, which is to release a strong and unhampered current of air.

Second, as to intensity. It is clear that in this respect the two series of variations differ markedly. The normal intensity of the candle-blowing sound is greater than that of the linguistic *wh;* this intensity, moreover, is very much more variable, depending as it does on the muscular tone of the blower, the size of the flame to be extinguished, and other factors. All in all, it is clear that the resemblance of the two *wh*-sounds is really due to an intercrossing of two absolutely independent series, as of two independent lines in space that have one point in common.

4. The speech sound *wh* has a large number of associations with other sounds in symbolically significant sound-groups, e.g. *wh-e-n, wh-i-s-k-ey, wh-ee-l.* The candle-blowing sound has no sound associations with which it habitually coheres.

5. We now come to the most essential point of difference. The speech sound *wh* is one of a definitely limited number of sounds (e.g. *wh, s, t, l, i,* and so on) which, while differing qualitatively from one another rather more than does *wh* from its candle-blowing equivalent, nevertheless belong together in a definite system of symbolically utilizable counters. Each member of this system is not only characterized by a distinctive and slightly variable articulation and a corresponding acoustic image, but also —*and this is crucial*— by a psychological aloofness from all the other members of the system. The relational gaps between the sounds of a language are just as necessary to the psychological definition of these sounds as the articulations and acoustic images which are customarily used to define them. A

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sound that is not unconsciously felt as "placed"[1] with reference to other sounds is no more a true element of speech than a lifting of the foot is a dance step unless it can be "placed" with reference to other movements that help to define the dance. Needless to say, the candle-blowing sound forms no part of any such system of sounds. It is not spaced off from nor related to other sounds—say the sound of humming and the sound of clearing one's throat—which form with it a set of mutually necessary indices.

It should be sufficiently clear from this one example—and there are of course plenty of analogous ones, such as *m* versus the sound of humming or an indefinite series of timbre-varying groans versus a set of vowels—how little the notion of speech sound is explicable in simple sensorimotor terms and how truly a complex psychology of association and pattern is implicit in the utterance of the simplest consonant or vowel. It follows at once that the psychology of phonetic processes is unintelligible unless the general patterning of speech sounds is recognized. This patterning has two phases. We have been at particular pains to see that the sounds used by a language form a self-contained system which makes it impossible to identify any of them with a non-linguistic sound produced by the "organs of speech," no matter how great is the articulatory and acoustic resemblance between the two. In view of the utterly distinct psychological backgrounds of the two classes of sound production it may even be seriously doubted whether the innervation of speech-sound articulation is ever actually the same type of physiological fact as the innervation of "identical" articulations that have no linguistic context. But it is not enough to pattern off all speech sounds as such against other sounds produced by the "organs of speech." There is a second phase of sound patterning which is more elusive and of correspondingly greater significance for the linguist. This is the inner configuration of the sound system of a language, the intuitive "placing" of the sounds with reference to one another. To this we must now turn.

Mechanical and other detached methods of studying the phonetic elements of speech are, of course, of considerable value, but they have sometimes the undesirable effect of obscuring the essential facts of speech-sound psychology. Too often an undue importance is attached to minute sound discriminations as such; and too often phoneticians

[1] This word has, of course, nothing to do here with "place of articulation." One may feel, for instance, that sound A is to sound B as sound X is to sound Y without having the remotest idea how and where any of them is produced.

do not realize that it is not enough to know that a certain sound occurs in a language, but that one must ascertain if the sound is a typical form or one of the points in its sound pattern, or is merely a variant of such a form. There are two types of variation that tend to obscure the distinctiveness of the different points in the phonetic pattern of a language. One of these is individual variation. It is true that no two individuals have precisely the same pronunciation of a language, but it is equally true that they aim to make the same sound discriminations, so that, if the qualitative differences of the sounds that make up A's pattern from those that make up B's are perceptible to a minute analysis, the relations that obtain between the elements in the two patterns are the same. In other words, the patterns are the same pattern. A's *s*, for instance, may differ quite markedly from B's *s*, but if each individual keeps his *s* equally distinct from such points in the pattern as *th* (of *think*) and *sh* and if there is a one to one correspondence between the distribution of A's *s* and that of B's, then the difference of pronunciation is of little or no interest for the phonetic psychology of the language. We may go a step further. Let us symbolize A's and B's pronunciations of *s*, *th*, and *sh* as follows:

A: *th* *s* *sh*
B: th_1 s_1 sh_1

This diagram is intended to convey the fact that B's s is a lisped s which is not identical with his interdental *th*, but stands nearer objectively to this sound than to A's *s*; similarly, B's *sh* is acoustically somewhat closer to A's *s* than to his *sh*. Obviously we cannot discover B's phonetic pattern by identifying his sounds with their nearest analogues in A's pronunciation, i.e. setting $th_1 = th$, s_1 = variant of *th*, $sh_1 = s$. If we do this, as we are quite likely to do if we are obsessed, like so many linguists, by the desire to apply an absolute and universal phonetic system to all languages, we get the following pattern analysis:

A: *th* *s* *sh*
B: th_1 s_1 sh_1 —

which is as psychologically perverse as it is "objectively" accurate. Of course the true pattern analysis is:

A: *th* *s* *sh*
B: th_1 s_1 sh_1

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for the objective relations between sounds are only a first approximation to the psychological relations which constitute the true phonetic pattern. The size of the objective differences *th*—*s*, *s*—*sh*, th_1—s_1, s_1—sh_1, *th*—s_1, s_1—*s*, *s*—sh_1, and sh_1—*sh* does not correspond to the psychological "spacing" of the phonemes *th*, *s*, and *sh* in the phonetic pattern which is common to A and B.

The second type of variation is common to all normal speakers of the language and is dependent on the phonetic conditions in which the fundamental sound ("point of the pattern") occurs. In most languages, what is felt by the speakers to be the "same" sound has perceptibly different forms as these conditions vary. Thus, in (American) English there is a perceptible difference in the length of the vowel *a* of *bad* and *bat*, the *a*-vowel illustrated by these words being long or half-long before voiced consonants and all continuants, whether voiced or unvoiced, but short before voiceless stops. In fact, the vocalic alternation of *bad* and *bat* is quantitatively parallel to such alternations as *bead* and *beat*, *fade* and *fate*. The alternations are governed by mechanical considerations that have only a subsidiary relevance for the phonetic pattern. They take care of themselves, as it were, and it is not always easy to convince natives of their objective reality, however sensitive they may be to violations of the unconscious rule in the speech of foreigners. It is very necessary to understand that it is not because the objective difference is too slight to be readily perceptible that such variations as the quantitative alternations in *bad* and *bat*, *bead* and *beat*, *fade* and *fate* stand outside of the proper phonetic pattern of the language (e.g., are not psychologically parallel to such qualitative-quantitative alternations as *bid* and *bead*, *fed* and *fade*, or to such quantitative alternations as German *Schlaf* and *schlaff*, Latin *ăra* and *ārā*), but that the objective difference is felt to be slight precisely because it corresponds to nothing significant in the inner structure of the phonetic pattern. In matters of this kind, objective estimates of similarity or difference, based either on specific linguistic habits or on a generalized phonetic system, are utterly fallacious. As a matter of fact, the mechanical English vocalic relation *bad*: *bat* would in many languages be quite marked enough to indicate a relation of distinct points of the pattern, while the English pattern relation *-t*· *-d*, which seems so self-evidently real to us, has in not a few other languages either no reality at all or only a mechanical, conditional one. In Upper Chinook, for instance, *t*: *d* exists objectively but not psychologically; one says, e.g., *inat* 'across,' but *inad* before

words beginning with a vowel, and the two forms of the final consonant are undoubtedly felt to be the "same" sound in exactly the same sense in which the English vowels of *bad* and *bat* are felt by us to be identical phonetic elements. The Upper Chinook *d* exists only as a mechanical variant of *t;* hence this alternation is not the same psychologically as the Sanskrit sandhi variation *-t: -d.*

Individual variations and such conditional variations as we have discussed once cleared out of the way, we arrive at the genuine pattern of speech sounds. After what we have said, it almost goes without saying that two languages, A and B, may have identical sounds but utterly distinct phonetic patterns; or they may have mutually incompatible phonetic systems, from the articulatory and acoustic standpoint, but identical or similar patterns. The following schematic examples and subjoined comments will make this clear. Sounds which do not properly belong to the pattern or, rather, are variants within points of the pattern are put in parentheses. Long vowels are designated as *a·*; *η* is *ng* of *sing; θ* and *δ* are voiceless and voiced interdental spirants; *x* and *γ* are voiceless and voiced guttural spirants; ' is glottal stop; ' denotes aspirated release; *ɛ* and *ɔ* are open *e* and *o*.

A:	*a*	(*ɛ*)	(*e*)	*i*	*u*	(*o*)	(*ɔ*)	
	(*a·*)	(*ɛ·*)	(*e·*)	*i·*	*u·*	(*o·*)	(*ɔ·*)	
	'	*h*	*w*	*y*	*l*	*m*	*n*	(*η*)
	p	*t*	*k*					
	p'	*t'*	*k'*					
	(*b*)	(*d*)	(*g*)					
	f *θ*	*s*	*x*					
	(*v*) (*δ*)	(*z*)	(*γ*)					
but B:	*a*	*ɛ*	*e*	*i*	*u*	*o*	*ɔ*	
	(*a·*)	(*ɛ·*)	(*e·*)	(*i·*)	(*u·*)	(*o·*)	(*ɔ·*)	
	(')	*h*	(*w*)	(*y*)	(*l*)	*m*	*n*	*ŋ*
	p	*t*	*k*					
	(*p'*)	(*t'*)	(*k'*)					
	b	*d*	*g*					
	(*f*) (*θ*)	*s*	(*x*)					
	v *δ*	*z*	*γ*					

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We will assume for A and B certain conditional variants which are all of types that may be abundantly illustrated from actual languages. For A:

1. ϵ occurs only as palatalized form of *a* when following *y* or *i*. In many Indian languages, e.g., $y\epsilon = ya$.

2. *e* is dropped from *i*-position when this vowel is final. Cf. such mechanical alternations as Eskimo *-e*: *-i-t*.

3. *o* is dropped from *u*-position when this vowel is final. Cf. 2.

4. $\mathfrak{o}$ occurs only as labialized form of *a* after *w* or *u*. Cf. 1. (In Yahi, e.g., *wɔwi* 'house' is objectively correct, but psychologically wrong. It can easily be shown that this word is really *wawi* and "feels" like a rhyme to such phonetic groups as *lawi* and *bawi;* short $\mathfrak{o}$ in an open syllable is an anomaly, but $\mathfrak{o}$· is typical for all Yana dialects, including Yahi.)

5. η is merely *n* assimilated to following *k*, as in Indo-European.

6. *b*, *d*, *g*, *v*, *z*, δ, γ are voiced forms of *p*, *t*, *k*, *f*, *s*, θ, *x* respectively when these consonants occur between vowels before the accent (cf. Upper Chinook *wa'pul* 'night': *wabu'lmax* 'nights'). As the voiced consonants can arise in no other way, they are not felt by the speakers of A as specifically distinct from the voiceless consonants. They feel sharply the difference between *p* and *p*', as do Chinese, Takelma, Yana, and a host of other languages, but are not aware of the alternation *p*: *b*.

And for B:

1. Long vowels can arise only when the syllable is open and stressed. Such alternations as *ma·'la*: *u·'-mala* are not felt as involving any but stress differences. In A, *ma'la* and *mala* are as distinct as Latin "apples" and "bad" (fem.).

2. ' is not an organic consonant, but, as in North German, an attack of initial vowels, hence *'a-* is felt to be merely *a-*. In A, however, as in Semitic, Nootka, Kwakiutl, Haida, and a great many other languages, such initials as *'a-* are felt to be equivalent to such consonant + vowel groups as *ma-* or *sa-*. Here is a type of pattern difference which even experienced linguists do not always succeed in making clear.

3. *w* and *y* are merely semi-vocalic developments of *u* and *i*. Cf. French *oui* and *hier*. In A, *w* and *y* are organically distinct consonants. Here again linguists often blindly follow the phonetic feeling of their own language instead of clearly ascertaining the behavior

of the language investigated. The difference, e.g., between *awa* and *awa* is a real one for some languages, a phantom for others.

4. *l* arises merely as dissimilated variant of *n*.

5. *p'*, *t'*, *k'* are merely *p*, *t*, *k* with breath release, characteristic of B at the end of a word, e.g. *ap-a*: *ap'*. This sort of alternation is common in aboriginal America. It is the reverse of the English habit: *tame* with aspirated *t* (*t'e'ᵉm*) but *hate* with unaspirated, or very weakly aspirated, release (*he'ᵉt*).

6. *f*, *θ*, and *x* similarly arise from the unvoicing of final *v*, *ð* and *γ*; e.g., *av-a*: *af*. *z* and *s* also alternate in this way, but there is a true *s* besides. From the point of view of B, *s* in such phonemes as *as* and *asa* is an utterly distinct sound, or rather point in the phonetic pattern, from the objectively identical *as* which alternates with *az-a*.[2]

The true or intuitively felt phonetic systems (patterns) of A and B, therefore, are:

[2] If B ever develops an orthography, it is likely to fall into the habit of writing *az* for the pronounced *as* in cases of type *az-a*: *as*, but *as* in cases of type *asa*: *as*. Philologists not convinced of the reality of phonetic patterns as here conceived will then be able to "prove" from internal evidence that the change of etymological *v*, *z*, *ð*, *γ* to *-f*, *-s*, *-θ*, *-x* did not take place until after the language was reduced to writing, because otherwise it would be "impossible" to explain why *-s* should be written *-z* when there was a sign for *s* ready to hand and why signs should not have come into use for *f*, *θ*, and *x*. As soon as one realizes, however, that "ideal sounds," which are constructed from one's intuitive feeling of the significant relations between the objective sounds, are more "real" to a naive speaker than the objective sounds themselves, such internal evidence loses much of its force. The example of *s* in B was purposely chosen to illustrate an interesting phenomenon, the crossing in a single objective phoneme of a true element of the phonetic pattern with a secondary form of another such element. In B, e.g., objective *s* is a pool of cases of "true *s*" and "pseudo-*s*." Many interesting and subtle examples could be given of psychological difference where there is objective identity, or similarity so close as to be interpreted by the recorder as identity. In Sarcee, an Athabaskan language with significant pitch differences, there is a true middle tone and a pseudo-middle tone which results from the lowering of a high tone to the middle position because of certain mechanical rules of tone sandhi. I doubt very much if the intuitive psychology of these two middle tones is the same. There are, of course, analogous traps for the unwary in Chinese. Had not the Chinese kindly formalized for us their intuitive feeling about the essential tone analysis of their language, it is exceedingly doubtful if our Occidental ears and kymographs would have succeeded in discovering the exact patterning of Chinese tone.

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A: *a* *i* *u*
a· *i¨* *u·*

' *h* *w* *y* *l* *m* *n*

p *t* *k*
p' *t'* *k'*
f *θ* *x* *s*

B: *a* *ɛ* *e* *i* *u* *o* *ɔ*

h *m* *n* *ŋ*

p *t* *k*
b *d* *g*
s
v *δ* *z* *γ*

which show the two languages to be very much more different phonetically than they at first seemed to be.

The converse case is worth plotting too. C and D are languages which have hardly any sounds in common but their patterns show a remarkable one to one correspondence. Thus:

C: *a* *ɛ* *i* *u*
a· *ɛ·*

h *w* *y* *l* *m* *n*

p *t* *k* *q* (velar k)
b *d* *g* *g̣* (velar g)
f *s* *x* *x̣* (velar x)

D: *ä* *e* *i* *ü*
ä· *e·*

h *v* *j*[3] *r* *m* *η*

p' *t'* *k'* *q'*
β[4] *δ* *γ* *γ̣* (velar *γ*)
f *š* *x̂*[5] *ḥ* (laryngeal *h*)

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[3] As in French *jour*.
[4] Bilabial *v*, as in Spanish.
[5] As in German *ich*.

Languages C and D have far less superficial similarity in their sound systems than have A and B, but it is obvious at a glance that their patterns are built on very much more similar lines. If we allowed ourselves to speculate genetically, we might suspect, on general principles, that the phonetic similarities between A and B, which we will suppose to be contiguous languages, are due to historical contact, but that the deeper pattern resemblance between C and D is an index of genetic relationship. It goes without saying that in the complex world of actual linguistic history we do not often find the phonetic facts working out along such neatly schematic lines, but it seemed expedient to schematize here so that the pattern concept might emerge with greater clarity.

An examination of the patterns of C and D shows that there is still a crucial point that we have touched on only by implication. We must now make this clear. We have arranged the sounds of C and D in such a way as to suggest an equivalence of "orientation" of any one sound of one system with some sound of the other. In comparing the systems of A and B we did not commit ourselves to specific equivalences. We did not wish to imply, for instance, that A's *s* was or was not "oriented" in the same way as B's, did or did not occupy the same relative place in A's pattern as in B's. But here we do wish to imply not merely that, e.g., C's *p* corresponds to D's *p'* or C's *h* to D's *h*, which one would be inclined to grant on general phonetic grounds, but also that, e.g., C's *w* corresponds to D's *v* while C's *b* corresponds to D's *β*. On general principles such pattern alignments as the latter are unexpected, to say the least, for bilabial *β* resembles *w* rather more than dentolabial *v* does. Why, then, not allow *β* to occupy the position we have assigned to *v*? Again, why should D's *ǰ* be supposed to correspond to C's *y* when it is merely the voiced form of *š*? Should it not rather be placed under *š* precisely as, in C's system, *b* is placed under *p*? Naturally, there is no reason why the intuitive pattern alignment of sounds in a given language should not be identical with their natural phonetic arrangement and, one need hardly say, it is almost universally true that, e.g., the vowels form both a natural and a pattern group as against the consonants, that such stopped sounds as *p*, *t*, *k* form both a natural and a pattern group as opposed to the equally coherent group *b*, *d*, *g* (provided, of course, the language possesses these two series of stopped consonants). And yet it is most important to emphasize the fact, strange but indubitable, that a pattern alignment does not need to correspond exactly to the more obvious

phonetic one. It is most certainly true that, however likely it is that at last analysis patternings of sounds are based on natural classifications, the pattern feeling, once established, may come to have a linguistic reality over and above, though perhaps never entirely at variance with, such classifications. We are not here concerned with the historical reasons for such phonetic vagaries. The fact is that, even from a purely descriptive standpoint, it is not nonsense to say that, e.g., the *s* or *w* of one linguistic pattern is not necessarily the same thing as the *s* or *w* of another.

It is time to escape from a possible charge of phonetic metaphysics and to face the question, "How can a sound be assigned a 'place' in a phonetic pattern over and above its natural classification on organic and acoustic grounds?" The answer is simple. "A 'place' is intuitively found for a sound (which is here thought of as a true 'point in the pattern,' not a mere conditional variant) in such a system because of a general feeling of its phonetic relationship resulting from all the specific phonetic relationships (such as parallelism, contrast, combination, imperviousness to combination, and so on) to all other sounds." These relationships may, or may not, involve morphological processes (e.g., the fact that in English we have morphological alternations like *wife*: *wives*, *sheath*: *to sheathe*, *breath*: *to breathe*, *mouse*: *to mouse* helps to give the sounds *f*, *θ*, *s* an intuitive pattern relation to their voiced correlates *v*, *ð*, *z* which is specifically different from the theoretically analogous relation *p*, *t*, *k*: *b*, *d*, *g;* in English, *f* is nearer to *v* than *p* is to *b*, but in German this is certainly not true).

An example or two of English sound-patterning will help us to fix our thoughts. *P*, *t*, and *k* belong together in a coherent set because, among other reasons: 1, they may occur initially, medially, or finally; 2, they may be preceded by *s* in all positions (e.g. *spoon*: *cusp*, *star*: *hoist; scum*: *ask*); 3, they may be followed by *r* initially and medially; 4, they may be preceded by *s* and followed by *r* initially and medially; 5, each has a voiced correspondent (*b*, *d*, *g*); 6, unlike such sounds as *f* and *θ*, they cannot alternate significantly with their voiced correspondents; 7, they have no tendency to be closely associated, either phonetically or morphologically, with corresponding spirants (*p*:*f* and *t*:*θ* are not intuitively correct for English; contrast Old Irish and Hebrew *t*:*θ*, *k*:*x*, which were intuitively felt relations—Old Irish and Hebrew *θ* and *x* were absolutely different types of sounds, psychologically, from English *θ* and German *x*). These are merely a few of the relations which help to give *p*, *t*, *k* their pattern place in English.

A second example is *η* of *sing*. In spite of what phoneticians tell us about this sound (*b*:*m* as *d*:*n* as *g*:*η*), no native English-speaking person can be made to feel in his bones that it belongs to a single series with *m* and *n*. Psychologically it cannot be grouped with them because, unlike them, it is not a freely movable consonant (there are no words beginning with *η*). It still *feels* like *ng*, however little it sounds like it. The relation *ant*:*and* = *sink*:*sing* is psychologically as well as historically correct. Orthography is by no means solely responsible for the "*ng* feeling" of *η*. Cases like *-ηg-* in *finger* and *anger* do not disprove the reality of this feeling, for there is in English a pattern equivalence of *-ηg-*:*-η* and *-nd-*:*-nd*. What cases like *singer* with *-η-* indicate is not so much a pattern difference *-ηg-*:*-η-*, which is not to be construed as analogous to *-nd-*:*-n-* (e.g. *window*:*winnow*), as an analogical treatment of medial elements in terms of their final form (*singer*:*sing* like *cutter*:*cut*).[6]

To return to our phonetic patterns for C and D, we can now better understand why it is possible to consider a sibilant like *j* as less closely related in pattern to its voiceless form *š* than to such a set of voiced continuants as *v*, *r*, *m*, *η*. We might find, for instance, that *š* never alternates with *j*, but that there are cases of *š*:*δ* analogous to cases of *f*:*β* and *x*:*γ*; that *ava*, *aja*, *ara* alternate with *au*, *ai*, *ar*; that combinations like *-aβd*, *-aδg*, *-aγd* are possible, but that combinations of type *-ajd* and *-avd* are unthinkable; that *v-* and *j-* are possible initials, like *r-*, *m-*, and *η-*, but that *β-*, *δ-*, *γ-*, *ɣ-* are not allowed. The product of such and possibly other sound relations would induce a feeling that *j* belongs with *v*, *r*, *m*, *η*; that it is related to *i*; and that it has nothing to do with such spirants as *š* and *δ*. In other words, it "feels" like the *y* of many other languages, and, as *y* itself is absent in D, we can go so far as to say that *j* occupies a "place in the pattern" that belongs to *y* elsewhere.

In this paper I do not wish to go into the complex and tangled

[6] Incidentally, if our theory is correct, such a form as *singer* betrays an unconscious analysis into a word of absolute significance *sing* and a semi-independent agentive element *-er*, which is appended not to a stem, an abstracted radical element, but to a true word. Hence *sing*: *singer* is not psychologically analogous to such Latin forms as *can-*: *can-tor*. It would almost seem that the English insistence on the absoluteness of its significant words tended at the same time to give many of its derivative suffixes a secondary, revitalized reality. *-er*, for instance, might almost be construed as a "word" which occurs only as the second element of a compound, cf. *-man* in words like *longshoreman*. As Prof. L. Bloomfield points out to me, the agentive *-er* contrasts with the comparative *-er*, which allows the adjective to keep its radical form in *-ng-* (*long* with *-g-*, *longer* with *-ηg-*).

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problems of the nature and generality of sound changes in language. All that I wish to point out here is that it is obviously not immaterial to understand how a sound patterns if we are to understand its history. Of course, it is true that mechanical sound changes may bring about serious readjustments of phonetic pattern and may even create new configurations within the pattern (in Modern Central Tibetan, e.g., we have *b-*, *d-*, *g-*: *B'-*, *D'-*, *G'-*,[7] while in classical Tibetan we have, as correspondents, *mb-*, *nd-*, *ŋg-*: *b-*, *d-*, *g-*; *mb-*, *nd-*, *ŋg-* are here to be morphologically analyzed as nasal prefix + *b-*, *d-*, *g-*). But it is equally true that the pattern feeling acts as a hindrance of, or stimulus to, certain sound changes and that it is not permissible to look for universally valid sound changes under like articulatory conditions. Certain typical mechanical tendencies there are (e.g. *nb* > *mb* or *-az*> *-as* or *tya*> *tša*), but a complete theory of sound change has to take constant account of the orientation of sounds in our sense. Let one example do for many. We do not in English feel that *θ* is to be found in the neighborhood, as it were, of *s*, but that it is very close to *δ* In Spanish, *θ* is not far from *s*, but is not at all close to *δ*.[8] Is it not therefore more than an accident that nowhere in Germanic does *θ* become *s* or proceed from *s*, while in certain Spanish dialects, as so frequently elsewhere, *θ* passes into *s* (in Athabaskan *θ* often proceeds from *s*)? In English *θ* tends to be vulgarized to *t* as *δ* tends to be vulgarized to *d*, never to *s;* similarly, Old Norse *θ* has become *t* in Swedish and Danish. Such facts are impressive. They cannot be explained on simple mechanical principles.

Phonetic patterning helps also to explain why people find it difficult to pronounce certain foreign sounds which they possess in their own language. Thus, a Nootka Indian in pronouncing English words with *ŋ* or *l* invariably substitutes *n* for each of these sounds. Yet he is able to pronounce both *ŋ* and *l*. He does not use these sounds in prose discourse, but *ŋ* is very common in the chants and *l* is often substituted for *n* in songs. His feeling for the stylistic character of *ŋ* and for the *n-l* equivalence prevents him from "hearing" English *ŋ* and *l* correctly. Here again we see that a speech sound is not merely an articulation or an acoustic image, but material for symbolic expression in an appropriate linguistic context. Very instructive is our attitude towards the English sounds *j*, *ŋ*, and *ts*. All

[7] *B*, *D*, *G* represent intermediate stops, "tonlose Medien." In this series they are followed by aspiration.

[8] The slight objective differences between English and Spanish *θ* and *δ* are of course not great enough to force a different patterning. Such a view would be putting the cart before the horse.

three of these sounds are familiar to us (e.g. *azure*, *sing*, *latex*). None occurs initially. For all that the attempt to pronounce them initially in foreign words is not reacted to in the same way. *ŋa-* and *ʒa-* are naïvely felt to be incredible, not so *ja-*, which is easily acquired without replacement by *dja-* or *ša-*. Why is this? *ŋa-* is incredible because there is no *mba-*, *nda-*, *ŋ(g)a-* series in English. *ʒa-* is incredible because there is no *psa-*, *tsa-*, *ksa-*, series in English; *-ts* is always morphologically analyzable into *-t* + *-s*, hence no feeling develops for *ts* as a simple phoneme despite the fact that its phonetic parallel *tš* (*ch* of *church*) is found in all positions.[9] But *ja-* is not difficult, say in learning French, because its articulation and perception have been mastered by implication in the daily use of our phonetic pattern. This is obvious from a glance at the formula:

-j-	*-z-*	*-ð-*	*-v-*
—	*z-*	*ð-*	*v-*

which is buttressed by:

-š-	*-s-*	*-θ-*	*-f-*
š-	*s-*	*θ-*	*f-*

Is it not evident that the English speaker's pattern has all but taught him *j-* before he himself has ever used or heard an actual *j-*?

There are those who are so convinced of the adequacy of purely objective methods of studying speech sounds that they do not hesitate to insert phonetic graphs into the body of their descriptive grammars. This is to confuse linguistic structure with a particular method of studying linguistic phenomena. If it is justifiable in a grammatical work to describe the vocalic system of a language in terms of kymograph records,[10] it is also proper to insert anecdotes into the morphology to show how certain modes or cases happened to come in handy. And a painter might as well be allowed to transfer to his canvas his unrevised palette! The whole aim and spirit of this paper has been to show that phonetic phenomena are not physical phenomena *per se*, however necessary in the preliminary stages of inductive linguistic research it may be to get at the phonetic facts by way of their physical embodiment. The present discussion is really a special illustration of the necessity of getting behind the sense data of any type of expression in order to grasp the intuitively felt and communicated forms which alone give significance to such expression.

[9] Obviously we need not expect *-ts* and *-tš* to develop analogously even if *s* and *š* do.

[10] Needless to say, such records are in place in studies explicitly devoted to experimental phonetics.

Editorial Note

Language 1 (1925), 37–51. [Reprinted in: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 33–45; in *Readings in Linguistics: The development of descriptive linguistics in America, 1925–56*. Edited by Martin Joos, New York: American Council of Learned Societies, 1957 [various reprints], pp. 19–25; and in V. Becker Makkai ed., *Phonological Theory: Evolution and Current Practice*, New York: Holt, Rinehart & Winston, 1972, pp. 13–21]

Correction:

p. 40, l. 11, read: phonemes (not: phonems)

[112] PHILOLOGY.—Since 1910 there has been a remarkable revival of interest in linguistic science. A number of linguists have turned aside from their specialist activities and concerned themselves with the restatement of fundamental principles. Among these works may be mentioned Otto Jespersen, *Language, Its Nature, Development and Origin*, and *The Philosophy of Grammar*; J. Vendryes, *Le Langage, Introduction Linguistique à l'Histoire*; and E. Sapir's *Language: an Introduction to the Study of Speech*. These writers approach the study of language from notably distinct viewpoints, so that their books supplement rather than parallel each other. Jespersen is mainly concerned with the more important modern languages of Europe and takes into consideration a good many matters of practical interest ordinarily neglected by the scientific linguist. Vendryes writes from the standpoint of the Indo-Europeanist and stresses the comparative and historical points of view. Sapir, a specialist in American Indian languages, is chiefly concerned with formal and psychological fundamentals, and uses freely examples taken from the languages of primitive peoples.

Psychology.—It is very noteworthy that other social and humanistic sciences than linguistics itself have taken a serious interest in the data of language. Psychology, which had been disposed to neglect language behaviour, has begun to analyse it more carefully in terms of stimulus and response; of habit; of adaptive function. A notable contribution to the understanding of language as a particular type of behaviour is J. R. Kantor's paper on *An Analysis of Psychological Language Data*, in which the peculiar characteristics of speech, whether communicative or expressive, are sought in its indirect nature as a response, the "adaptive stimulus" being responded to not directly but in the form of a reference, while a secondary stimulus, generally the person spoken to, is substitutively reacted to. J. B. Watson, the extreme exponent of behaviourism, sees in language merely a series of highly specialised laryngeal habits, and goes so far as to identify language with thinking by interpreting the latter type of behaviour as implicit or "sub-vocal" laryngeating. Such ultra-behaviouristic interpretations of language are not likely to meet with the approval of the linguists themselves, but they may have a certain value in accustoming us to approach the study of language habits without necessary reference to the logicians' world of "concepts." There is reason to believe that the kind of psychology (*see* PSYCHOLOGY) which will prove of the greatest value to linguistic science is the *Gestalt psychologie* (configurative psychology), which is still in its elementary stages. In this type of thinking the emphasis on behaviour is placed on the total form or configuration of a sequence of acts viewed as a system. To apply configurative psychology to language one may say that no linguistic act, however elementary, can be looked upon as a mere response, nor can even the simplest speech articulation be understood in terms of muscular and nervous adjustments alone.

Language always implies a particular kind of selective organisation; no speech sound, as Sapir has shown in a paper, *Sound Patterns in Language*, is intelligible as a habit without reference to the complete system of sounds characteristic of a given language, the individual sound being defined not merely as an articulation, but as a point in a pattern, with the other points of which it has intuitively felt

relations (*see* PHONETICS). For the more complex levels of linguistic organisation the pattern point of view is more obviously in place.

Philosophy. —Even more fruitful for linguistics than psychology has been the work of certain philosophers. As the relativity of all knowledge and all experience to the habitual symbolism by means of which they are expressed has become more and more clearly understood, philosophy has begun to take a very lively interest in the relation between language and thought, in the nature of the symbolic process exemplified in, but not exhausted by, language, and in allied problems of meaning, reference and classification of experience. Philosophers of standing, such as Cassirer, Delafosse and Ogden and Richards, **[113]** have been occupying themselves with linguistic problems as never before. New viewpoints have been arrived at which are of capital interest for both philosophy and linguistics. In an important work entitled *The Meaning of Meaning* Ogden and Richards have carefully explored the nature of the symbolic and referential process involved in the use of language and have classified the concept of "meaning" itself. Many problems that have occupied the attention of philosophers and logicians are shown to be not essential problems but pseudo-problems that arise from the almost unavoidable temptation to read an absolute validity into linguistic terms that are really devoid of meaning when they are disconnected from a more or less arbitrarily defined context.

Forms of Speech. —The study of forms of speech that are very different from those that most of us are accustomed to —say English, French or Latin— discloses the possibility of markedly distinct analyses of experience where one might naïvely suppose that our customary analysis via speech is resident, as it were, in the nature of things. Categories that are carefully developed in one language are but weakly developed, or not at all, in another. Even the elements of sensible experience, whether conceived of as thing (say "tree"), quality (say "blue") or action (say "give"), are not necessarily taken as equivalent ranges of reference ("concepts") in different languages, but may be included in, or distributed among, respectively different ranges. It may even happen that what in one language is a definite experiential concept, with an unambiguous mode of reference to it, finds not even a partial expression in another, but is left entirely to the implications of a given context. Such a language may be said to have no "word" or other element for the "idea" in question, from which, however, it need not in the least follow that it is incapable of satisfactorily conveying the total psychic sequence ("thought") or unit of communication in which the "idea," in another language, figures as an essential element. Linguistic expressions of this kind are naturally of the greatest value for our conception of the nature of "reality" and of our symbolised attitude toward it, and certain philosophers have not been slow to turn to language for this reason.

That in the process of thought linguistic mechanisms play an important part is beyond doubt. Material rich in interest for the philosopher, the psychologist, the philologist and the sociologist is afforded by the modes of classification in use in various language families, such as classificatory prefixes and generic determinatives.

Sociology and Anthropology.—Sociologists and anthropologists too have interested themselves in linguistic phenomena as indispensable to an understanding of social behaviour. Especial mention may be made of B. Malinowski's speculations on the linguistic expression of primitive peoples. The value of language as a delimiter and index of social groups is being increasingly recognised by sociologists. One may wonder, indeed, if there is any set of social habits that is more cohesive or more disrupting than language habits. Not only has language been an object of study in its own right, but it has shown itself increasingly to be of the greatest instrumental value in all historical studies. The best kind of ethnological and folk-loristic material is that which is secured in the form of native texts, for material of this kind is not open to the charge of misrepresentation of the native point of view. Accordingly, we find that the text method of studying the cultures of exotic peoples, whether lettered or not, has been growing in favour, in spite of the obvious difficulties of the method, implying as it does a preliminary study of the exotic language itself. Indeed, much of the most competent and authoritative ethnological information that we possess has been obtained as material ancillary to linguistic studies. One may instance, for America, the Kwakiutl publications of Franz Boas and, for Africa, the Shilluk texts of D. Westermann.

Place Names.—In another sense, too, linguistic researches have been of great assistance, and that is in enabling us to make inferences as to the history and prehistory of various peoples. The value of place names, *e.g.*, in the study of the former distributions of the various ethnic elements that go to make up the present population of England, is well understood (see FOLKLORE). Much of the prehistory of Europe and Western Asia is being rewritten with the aid of a profounder study of place names. The non-Hellenic character of hundreds of well-known Greek place names, such as Athenai, Korinthos and Tiryns, is interesting and important in connection with our rapidly increasing knowledge of the pre-Hellenic or Minoan civilisation of the Aegean and of the mainland of Greece. The Etruscan problem, too, has been furthered by a study of the recorded place and personal names of Etruria that are clearly not of Italic origin. These show so many resemblances to names recorded from western Asia Minor (*e.g.*, Lydia, Lycia) that there is now less hesitation than before to credit the testimony of Herodotus, who derives the Turrhenoi (Etrusci) from Asia Minor.

General Tendencies.—We may point out a number of tendencies in recent linguistic thinking. First of all, there is a growing realisation that the life of language is similar in all parts of the world, regardless of the race or cultural development of the speakers of the language, and that the rate of linguistic change is not seriously dependent on the presence or absence of writing. The supposed conservative power of a system of writing, it is now generally agreed, is altogether mythical. It is an illusion to imagine, for instance, that Chinese as a spoken language was hindered from the normal rate of change because of an early literary fixation. Not only have the modern dialects a notably different vocabulary from classical Chinese but their pronunciation has been so modified that it is clear that present-day Mandarin or Cantonese would be quite as unintelligible to Confucius as present-day Spanish to Cicero.

Internal Factors in Change. —The most important single factor making for an increased or retarded rate of linguistic change would seem to be the formal set of the language itself. It is significant, for instance, that the Semitic languages have changed very much less in the last 3,000 years than have the Indo-European languages. The Athabaskan (Déné) languages of North America, spoken by unlettered tribes which had, for the most part, reached but a very primitive level of culture, have tended to resist morphological change because of a certain formal equilibrium, despite the complexity of their grammatical structure, hence such widely separated languages as Navaho (New Mexico and Arizona), Hupa (Northern California) and Chipewyan (Mackenzie Valley) differ probably less than French and Italian (*see* ARCHAEOLOGY: CENTRAL AMERICA).

Consistency of Change. —One of the most impressive things about linguistic change within a given genetic group is the relative consistency of its direction over a long period of time. Well-known examples of this principle are the progressive simplification of the case system in all branches of the Indo-European family and the ever-increasing tendency to isolation in the structure of the Sinitic (Indo-Chinese) languages. It is very remarkable, too, that in many cases it can be shown that related languages have undergone similar developments independently of each other and at very different periods. "Umlaut," for instance, seems to have developed independently in West Germanic and in Scandinavian, just as certain tonal developments in modern Tibetan (central dialects) are significantly parallel to the far older tonal developments of the earliest Chinese. It is difficult to explain these parallelisms except on the assumption that a given formal set implies a certain liability to modification in one rather than in another direction.

External Contacts. —Important, yet less important than the inner "drift" of a language, is the tendency to change as a result of external contact. Not only lexical, but also far-reaching phonetic influences may be ascribed to the contact of unrelated languages. Although Annamite seems to be basically a Mon-Khmer language, therefore originally toneless, it has acquired a complicated tone mechanism which is, in principle, identical with that of the neighbouring Tai languages (Siamese, Shan, Laos, Thō). Morphological features, too, may be freely diffused, though the evidence for this is less convincing in most cases than for the spread of words and of phonetic elements and tendencies. Often it is difficult to say whether a morphological **[114]** parallelism is due to historic contact or to genetic relationship or to independent development.

The effects of bilingualism deserve attention, especially in those areas where permanent contact is established between two different families of speech, as in India, where Indo-Aryan languages are spoken in addition to Dravidian or Austric or Indo-Chinese tongues. The principles of the growth of *linguae francae* have also been examined, but much yet remains to be done. Internal social developments as well as exterior relations induce linguistic features of interest and of philological value in themselves. The phenomena recorded by anthropologists of secret speech, of slang, of special modes of speech associated with social divisions, women, age-grades, priests and kings bear witness to the importance and

validity of linguistics in the study of social aggregates and their corporate manifestations.

Morphology.—The morphological classification of languages still leaves much to be desired. It is abundantly clear that the traditional classification of types of speech into isolating, agglutinative, inflective and polysynthetic is imperfect. It is difficult to find easily applicable criteria of general linguistic structure. Perhaps the safest plan is to adopt a number of distinct points of view and to classify a given language from each of these. Sapir suggests the possibility of three independent types of classification, based respectively on degree of synthesis, on the predominant "technique" (manner and degree of welding of elements into unities), and on the conceptual expressions. From the first point of view languages may be described as analytic (Chinese, Ewe), weakly synthetic (English, Tibetan) synthetic (Latin, Turkish, Japanese) and polysynthetic (Eskimo, Algonquin). The classification based on "technique" is into isolating (Chinese, Annamite), agglutinative (Turkish, Nootka, Bantu), fusional (Latin, French, Yokuts) and "symbolic", i.e., with the characteristic employment of various types of internal change, such as vocalic and consonantal change, reduplication and differences of stress and pitch (Semitic, Shilluk). A conceptual classification would distinguish between languages which can and those which cannot freely derive words from basic elements and, further, between those which express the fundamental relational (syntactic) concepts as such and those which need adventitious concepts like gender or number to bring out these necessary relational ideas. There would, therefore, be theoretically four conceptual types of languages—pure-relational, non-deriving languages (Chinese), pure-relational deriving languages (Polynesian, Haida), mixed-relational non-deriving languages (but meagrely represented) and mixed-relational deriving languages (Latin, Semitic, Algonkin).

Phonetics.—Much progress has been made in phonetic research (see PHONETICS). A vast number of new sounds have been discovered and whole classes of articulation come to light from time to time whose existence could not readily have been foretold by an *a priori* phonetic analysis. The help derived by linguists from objective methods of investigation (various types of recording apparatus) has been welcome but, none the less, disappointing on the whole. A well-trained ear can readily make and classify sound differences which a kymograph does not materially help us to understand. As our knowledge of phonetics grows, we realise that sounds and phonetic discriminations originally believed to have a quite restricted distribution are really rather widely distributed. The Hottentot and Bushman clicks, partly borrowed by certain Bantu languages, seem to be confined to South Africa. But the curious glottalised consonants and voiceless laterals of Western American languages are found as well in the Caucasus and in a number of African languages. Again, tone differences or significant elements in the word are by no means confined to Chinese and related languages in Eastern Asia. We now know that pitch languages are exceedingly common. Most of the African languages that are not Semitic or Hamitic are pitch languages (Sudanese, Bantu, Hottentot, Bushman), while in aboriginal America a very considerable number of languages have been found to recognise tonal differences (e.g., Athabaskan,

Tlingit, Achomawi, Takelma, Tewa, Mohave, Mixteczapotec, Chinantec, Otomi and many others.)

Genetic Relations. —For a long time linguists hesitated to look for genetic connections between the groups and isolated languages that had been established. There is an increasing tendency now to make larger syntheses and to suggest as at least probable, if not entirely demonstrable, relations that at first blush seem farfetched. Among serious linguists Alfredo Trombetti is perhaps the only one who has ventured to commit himself to the theory of linguistic monogenesis and has actually attempted (*see* his *Elementi di Glottologia*) to show in what manner the various groups of languages that are generally recognised are related to each other. The most important general survey of languages published in recent years, *Les Langues du Monde*, edited by A. Meillet and Marcel Cohen, is very conservative in the matter of genetic theories, but even in this a number of syntheses are allowed that would not have passed muster a few decades ago. There is no doubt that as our comparative knowledge becomes more profound we shall be enabled to extend our genetic groups with safety.

North and South American Languages. —We can only glance at some of the new genetic theories. The incredibly complicated linguistic picture of North and South America, which has long been proverbial among linguists is likely to become very appreciably simplified. R. B. Dixon, A. L. Kroeber, P. Radin, Sapir, <J.> R. Swanton and P. Rivet are among those who have sought to bring order out of the linguistic chaos that still largely prevails in America. For the groups of languages spoken north of Mexico and in part in Mexico Sapir suggests a greatly simplified classification into six genetic groups, Eskimo, Nadene (Haida, Tlingit-Athabaskan), Hokan-Siouan, Algonquin-Wakashan, Penutian and Aztek-Tanoan. These groups, aside from Eskimo, embrace languages, however, which differ vastly more than the Indo-European languages. In South America Rivet has connected various groups of languages hitherto believed to be unrelated. He has also attempted to prove a relationship between certain Fuegian languages and the languages of Australia, and between the Hokan languages of California and Polynesian.

The Austric and Australian Languages. —More likely to prove sound than these latter theories is Father W. Schmidt's linguistic synthesis which passes under the name of "Austric" and which includes the vast group of languages—Mon-Khmer (Mon-Khmer proper; Khasi; Proto-Malaccan, Nicobarese; Munda) and Malayo-Polynesian.

Analysis of the Australian languages by Father Schmidt seems to disclose the existence of a definite distinction between the northern and southern groups. The northern group is resolved into two main divisions with a third division of an intermediate nature. There are marked differences in the southern group, some of which are regarded as approaching Tasmanian (now extinct) and as therefore markedly primitive. To a very large extent linguistic differences in this area, claims Father Schmidt, can be correlated with variations of, or differences in, other cultural features such as social organisation.[1]

[1] *Anthropos*, vol. 8 (1912), p. 260 and p. 463; vol. 9 (1913), p. 526.

African Languages. —In Africa we may note as important the discovery of a language spoken in the east-central portion of the continent, Sandawe, which is unmistakably related to Hottentot, spoken far to the south. This lends an unexpected colour to theories long prevalent as to the Hamitic affiliation of Hottentot. The sharp line of demarcation which used to be drawn between the Bantu and Sudanese languages is giving way. Everything points to the fact that the Sudanese languages are a worn-down form of a language, or group of languages, which was genetically related to Bantu. A number of Sudanese languages possess class prefixes (or suffixes) that are strongly reminiscent of the Bantu prefixes, while bare survivals of these elements persist in a great many other Sudanese languages.

The publication of Sir H. H. Johnston's work on the Bantu languages was an event of first class scientific importance. It summarises and surveys with masterly power the sweep of this family of languages throughout Africa and argues that "the Bantu family was finally moulded by some non-negro incomers of [115] possibly Hamitic affinities, akin at any rate in physique and culture, if not in language, to the dynastic Egyptians, the Gallas and perhaps most of all to those 'Ethiopians' of mixed Egyptian and Negro-Nubian stock that, down to 1,000 years ago, inhabited the Nile basin south of Wadi-Halfa and north of Kordofan."

Indo-European, Semitic and Hamitic Languages. —Hermann Möller's very systematic and detailed attempt to connect Indo-European and Semitic (the relationship of which to Hamitic is now generally recognised) seems not to have been cordially received by either the Indo-Europeanists or the Semitists, but to the general linguist who studies his works his demonstration seems highly suggestive, not to say convincing. Less solid seems to be the attempt of N. Marr, a Russian linguist, to establish a "<J>aphetic" group of languages, consisting of the Caucasic languages, Basque, and that large number of still very imperfectly known languages which preceded the Indo-European group in southern Europe and western Asia (Etruscan, Minoan, "Asianic" [early Hittite]).

More and more it is becoming evident that the linguistic cartography of the Near East and of Europe was a complicated one in remote times. The discovery and partial decipherment of a series of cuneiform "Hittite" inscriptions from the second millennium B.C. proves a number of interesting things—that a language closely related to Sanskrit and known from quoted terms was spoken in the neighbourhood of the Hittite country; that the language of the Hittite rulers had unmistakable Indo-European features, but was not typically, or even mainly, Indo-European in character; and that an older Hittite language was quite unrelated to this. Just what relationship, if any, the non-Indo-European elements of these Hittite languages bear to "Asianic" (Lycian, Lydian, Carian and others) and the Caucasic, remains to be discovered (*see* ARCHAEOLOGY: WESTERN ASIA).

Discovery of Tokharian. —Perhaps the most interesting linguistic discovery that has been made of recent years in the domain of Indo-European philology, apart from the "pseudo-Hittite" documents just referred to, is the presence of two dialects of a language, generally termed Tokharian in Chinese Turkistan, as late as the 7th century A.D. Tokharian is quite distinct from any other known

Indo-European language and has thrown light on a number of points of Indo-European grammar. In certain phonetic respects it agrees more closely with Greek and Latin than with the Indo-Iranian languages that were geographically nearer to it.

Pisacha Languages.—Problems of an interesting nature are raised by the evidence published (1919) in vol. 8, part 2, of the *Linguistic Survey of India* by Sir George Grierson, who describes the Dardic or Pisacha languages as not possessing all the characteristics either of Indo-Aryan or of Eranian. They exhibit almost unaltered and in common use words which in India are hardly found except in Vedic Sanskrit. The wild, mountainous country in which these languages are found has not attracted the conqueror. An interesting feature is the survival of words from Burushaski, a form of speech which has not yet been satisfactorily related to any other language group.

Karen Languages.—Examination of the languages spoken in Burma, an area not covered by the *Linguistic Survey*, has justified the view that the Karen group of languages constitute a new family of languages which exhibits features resembling those of the Chin and Sak languages, even of some of the sub-Himalayan dialects. Sir George Grierson suggests the possibility of a widespread pre-Tibeto-Burman population, which was absorbed, with parts of its language, by the later Tibeto-Burman immigrants.

Other Families.—The Man family is similarly regarded as distinct but it is a newcomer from Southern China, whence further evidence may be available to identify its main relationship. There are thus in the confines of the Indian Empire language stocks of world-wide distribution and languages—the Dravidian tongues—Burushaski, Karen, Man and Andamanese, which survive in isolation. It has been surmised that Dravidian languages may be related to Sumerian or to Basque, or to a common prototype, but conclusive evidence has not yet been put forward in proof of these hypotheses.

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Editorial Note

Encyclopaedia Britannica, 13th ed., Supplementary Volumes, vol. 3 (1926), 112–115. [Reset after the originally published version; editorial changes are indicated with <>]

Mankind, Nation and Individual from a Linguistic Point of View. BY OTTO JESPERSEN. Cambridge, Massachusetts: Harvard University Press (H. Aschehoug & Co.), 1925. Pp. 221

[498] The eleven chapters of this very readable and commendably untechnical book were originally delivered as a series of lectures for the Norwegian Institute for Comparative Research in Human Culture. The volume forms the fourth in Series A of the publications of this Institute. Its title is perhaps too ambitious for what is included between its covers, which consists of a discussion of the concepts "speech" and "language," remarks on the actual influence on language of the individual as such, two chapters on the relation between dialect and "common language," an account of what constitutes good usage in speech, examples of socially determined linguistic differences, and some interesting material on slang and other vagaries or eccentricities of language. In its concluding chapter, Jespersen stresses what is universally valid in human speech, cutting across all the bewildering variety of phonetic and morphological expression in the languages of the world. He casts a prophetic glance at the (or rather, an) international auxiliary language—Jespersen's interest in Ido, an offshoot of Esperanto, is well known—but does not enlarge upon this somewhat contentious subject.

There is little that is new in the book, nor can the presentation be said to be characterized by any noteworthy originality of point of view. But it is all worth while, and it is all pervaded by Jespersen's common sense and good practical judgment. One may make some demur, however, to his unsympathetic dismissal of the distinction that certain linguists, like De Saussure and Harold E. Palmer, have made of "speech" **[499]** and "language." According to these, "speech" is the totality of articulatory and perceptual phenomena that take place when given individuals indulge in language behavior at a given time and place. "Language," on the other hand, is society's abstracted pattern-whole of such behavior, all purely individual variations being dismissed as irrelevant. Jespersen's criticisms of this useful distinction are obvious but unsound, it seems to the reviewer. A certain class of phenomena cannot be shown to be illusory, as Jespersen appears to think, merely because it is unthinkable in terms of actual experience except as a mode of abstraction of another, more empirically ascertained, class. If carried to their logical conclusion, Jespersen's strictures would demolish the study of all cultural patterns and condemn the social scientist to the interminable listing of individual events. Needless to say, Jespersen merely overstates the consequences of a characteristically "extraverted" spirit of linguistic research. His own excellent work in the history of the English language shows that he instinctively and wisely recognizes a distinction that he is theoretically at a loss to validate.

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Editorial Note

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LANGUAGE AS A FORM OF HUMAN BEHAVIOR[1]

EDWARD SAPIR

So long as the facts of speech are discussed only by students professionally interested in language its peculiar characteristics are very likely to be overlooked. It is not surprising, therefore, that philologists and teachers of particular languages are apt to have vaguer and cruder notions of the fundamental characteristics of human speech than such unspecialized students of human behavior as concern themselves with this most human of all reactive systems. It is clear that if we are ever to relate the fundamental problems of linguistic science to those of human behavior in general—in other words, to psychology—we must learn to see language as possessed of certain essential characteristics apart from those of particular languages that we may happen to be familiar with and as rooted in some general soil of behavior that gives birth to other than strictly linguistic forms of expression.

If we take a bird's-eye view of the languages of the world we find that there are certain things that characterize them as a whole and that tend to mark them off somewhat from other forms of cultural behavior. In the first place we are struck by the marvelous completeness of formal development of each and every language that we have knowledge of. Popular opinion to the contrary, there is no known language, whether spoken by a culturally advanced

[1] An address delivered before the joint session of the National Council of Teachers of English and the English Language Congress at Philadelphia, November, 1926.

group or by one of the more backward peoples of the world, which has not its perfectly definite phonetic system, its clearly developed and often very complex system of forms, and its established rules and idioms of usage. In other words, there is no such thing as a language that has not its well-defined grammar, though it goes without saying that this grammatical system is never consciously known or capable of communication by the untutored folk. We may further say of all normal forms of human speech that they have the appearance of systems of behavior that are rather definitely marked off from all other organizations within the general range of conduct. When we deal with such flexible categories of socialized behavior as religion or art or government or education, it is difficult to draw convincing lines. A given reaction may be placed now here, now there, but there seems never to be any reasonable doubt as to the formal identity of a speech act. This is all the more remarkable as speech is not in actual life handled as a self-satisfying reactive system. It comes into use and consciousness merely as a general lever for all types of expression. There is no pure linguistic conduct. There is only conduct in which the need is felt for communication or expression and in which this need is solved with the help of an elaborate linguistic apparatus, always ready to hand.

We are learning to attribute more and more importance to the part played by the unconscious mind in the development of our habits. We realize more clearly than the psychologists and philosophers of the past have realized that the consciously controlled type of behavior is always a secondary type, and that all intellectual formulations are little more than a conscious control, in set terms, of knowledge that is already possessed in an unconscious or intuitive form. It is characteristic of the more important types of socialized conduct that they tend to draw the attention of individuals and societies to themselves and thus become an object of conscious formulation—in other words, of scientific study. It does not follow, however, that a scientific statement of facts, say of religion or other aspects of social conduct, is more accurate or more delicately nuanced than the intuitive knowledge and control which preceded it. One may have, and often does have, an astonishing fineness of intuitive control without being in the least possessed of an even

elementary knowledge of the reactive system as such. Hence it is not surprising that statements made by sophisticated, no less than by more naive, people about their own forms of speech and about the nature of their linguistic responses are often wide of the mark. It is well known that Plato indulged in extraordinarily childish speculations on the nature of the Greek language.

We must, therefore, carefully refrain from making the common mistake of confusing the intuitively felt complexities of language with an intellectually controlled statement of them. If we do not learn to make this important distinction we shut ourselves off from the possibility of understanding the marvelous formal intricacy of so many of the languages of primitive man, and—what is of more general interest—of understanding how the child is able to acquire as firm and accurate and extended a control of linguistic habits as he does. Long before the child knows the difference between a singular and a plural, long before he has any notion that there is such a thing as tense, he has learned to use the categories of number and tense with perfect freedom and comfort. With the development of civilization, language has tended more and more to rise into consciousness as a subject of speculation and study; but it still remains characteristic of language as a whole that of all the great systems of social patterning it is probably the one which is most definitely unconscious in its operation. But the unconsciousness of the speech processes is not to be interpreted in any vague or mystic sense. All that we mean is that our intuitive sense of the relations between forms of expression is keen enough to enable us to acquire a full control of speech habits without the necessity of an intellectual overhauling. The clarity and certainty of this intuitive process is best evidenced by the fact that when natives who have never learned the grammar of their own language come in contact with a field investigator who endeavors to discover this grammar by inductive methods of inquiry, the natives often develop—and in a short time—a very real comprehension of what the inquirer is after. They can often help him with the statement of explicit rules and with observations that could never have occurred to them in the normal course of their daily life.

The next and most obvious of the general features of speech is

its indirect or symbolic character. No normal speech utterance really means what it biologically seems to mean. In other words, if I move the lips or tongue or glottal cords in this or that fashion it is not because these movements are of any direct use in my adjustment to the environment. It is because by means of these movements I am able to effect articulations that are perceived as arbitrary sequences of sounds conveying more or less definite notions which stand in no intelligible relation to the articulations themselves. If I move my tongue in order to lick a piece of candy I carry out a movement which has direct significance for the desired end, but if I put my tongue in the position needed to articulate the sound "l" or a given vowel, the act is in no way useful except in so far as society has tacitly decided that these movements are capable of symbolic interpretation. It is highly important to realize that symbolic systems, which are systems of indirect function, are not in theory confined to speech. One may have a pantomimic symbolic system or any other kind of symbolic system developed by some part of the organism, but it remains strikingly true that no other human type of symbolic behavior compares for a moment in completeness or antiquity or universality with the symbolism known as speech. It is further important to observe that there seem to be no appreciable differences in the languages of the world in regard to their relatively symbolic character. The sound sequences that are used as symbols of reference by the Hottentot or the Eskimo are to all intents and purposes as arbitrary as those used by a modern Englishman or Frenchman or German.

This brings us to what is, in some respects, the most surprising fact about language: that, universal as it is, it is at the same time the most variable of all human institutions in the actual detail of its overt expression. All types of religious belief, all systems of decorative art, all kinship systems, all methods of organizing society have certain unmistakable things in common so far as their actual content is concerned; but when it comes to speech, which is more deeply rooted in human society than any one of these systems of activity, we find that its actual content in terms of words, linguistic forms, and methods of articulation is almost infinitely variable. We must conclude from this that what is fundamentally character-

istic of speech at any given time and place is not its overt form, which can only be understood as the resultant of a very complicated series of historical circumstances, but its ground plan. Languages do not profoundly matter. It is the habit of language as such that is of such tremendous importance for humanity. The best proof of this is the ease with which human beings learn to pass from one language to another and the ease with which they transfer from one symbolic medium to another—from oral speech to writing, from writing to the telegraph code, and so on indefinitely. It comes to this: that language cannot be adequately defined as a set of physical habits, but must be understood rather as an arrangement, for purposes of communication and expression, of all the elements of experience in accordance with a complex system of intuitively felt relations that can choose any perceptible tokens or symbols they have a mind to.

So far we have been assuming that the task of language is a purely denotive one; that when we say "horse," for instance, our sole purpose is to convey a reference to a class of well-known animals. If we look more closely at what actually happens in human speech, however, we are impressed by the fact that the denotive function of speech is always compounded with certain expressive factors which we are in the habit of leaving out of account in our formal designations of linguistic processes, but which are always present in the actual life of language. It is impossible to pronounce even so indifferent a word as "horse" without a lesser or greater show of interest, without some change of emotion. This expressiveness may relate to our personal attitude toward horses in general or to a particular horse that has been called up as an image in our minds. Or very frequently, too, the expressiveness of articulation may have nothing to do with the animal but may relate to our attitude toward the person that we are speaking to or thinking of, or to our own general state of mind. In extreme cases our pronunciation of the word "horse" may be infinitely more significant as revealing a distracted state of mind or an intense interest in the person spoken to than as a pure denotive symbol. It becomes clear that in the course of our speech activities we are really doing two rather distinct things, though these are never to be completely sun-

dered except by a process of abstraction. On the one hand, we are using words as algebraic symbols for classes of ideas to which we refer certain individual references that we wish to make. On the other hand, we are giving some hint of our attitude toward these ideas or toward some of the things or persons present in the background of the speech act. It is because we are alert to the endless conflict between the denotive and the expressive aspects of speech that we can safely interpret many words or phrases or statements in a sense that is completely at variance with their supposed meaning. If a man slaps his friend on the back with the remark that he is a "rascally dog," he knows very well that his words will not be understood to mean what they seem to mean. Again, measured words of praise may be so uttered as to amount to an insult. All these remarks are commonplaces, but their importance is perhaps not sufficiently understood by students of language. We have been too successfully schooled by the grammarians and the systematizers of speech phenomena to have much charity for these apparently dubious or secondary uses of speech. But what if it turned out, in the upshot, that these usages are not as secondary as they seem, that we have reason to believe that in the remote past, when language was beginning to emerge as a symbolic system, its use was even more expressive than at present? What if language were merely conventionalized gesture—using the word "gesture" in its widest possible sense as indicating any form of expression?

A parallel from an entirely unconnected type of human behavior may be useful at this point. If I am very much angered by something that one has said or done, I may so forget myself as to lunge forward with the obvious intention of hitting him. My reaction would be directly expressive in a functional sense. Now, I may inhibit the reaction without entirely destroying its form. There may be enough of the gesture left to make it obvious to the bystanders that I had had the impulse to strike. This abbreviated or rudimentary gesture will then be felt as in some sort a symbol of my attitude. But it is an individual symbol which I have created, at it were, on the spur of the moment, and which is not to be interpreted in accordance with an artificial social code. But suppose, further, that this gesture becomes accepted by society at large as a

pantomimic symbol of the striking act, then we have what amounts to all intents and purposes to an unemotional, denotive symbol of the notion of striking. It would then be possible for human beings to use such a gesture for purposes of reference only. They would not necessarily feel the impulse to strike when they used the pantomimic gesture for it. Now it is, of course, perfectly obvious that rudimentary symbolisms of this sort are constantly being created by individuals and that they tend to become more or less characteristic of our varying social groups, but they have never succeeded in elevating themselves to the status of universal symbolisms of reference. What if speech were, at last analysis, a highly conventionalized system of just such expressive gestures which by constant use had lost their original expressive content, having been rubbed down to the status of purely referential symbols?

In order clearly to understand the point of view that we are trying to develop it is necessary to take a glance at human responsiveness in general. We shall then be able to put speech in its proper perspective, to see it, not as the extraordinarily isolated and peculiar thing that it at first seems to be, but as a highly evolved product of a type of activity that is far more general in scope. In the case of the arrested gesture of striking that we discussed before there was an obvious resemblance between the activity that resulted from the impulse to strike and the eventually pantomimic symbol built up out of it. But a more inclusive observation soon discloses the fact that symbols need not arise in quite so simple a manner.

We are in the habit of looking at all forms of human activity from a functional point of view. A man moves his jaws when engaged in the act of eating in order to prepare the food for swallowing. He moves his limbs in order to walk. He strains his eyes in order to see more clearly. He lifts his voice in order to reach the ears of a distant person. And so on indefinitely. But these obviously functional acts by no means constitute the sum total of human behavior; it becomes necessary to inquire if a large portion of this behavior may not be interpreted in other than strictly functional terms. We may return, for purposes of illustration, to the example that we gave before. It is perfectly true that the act of

lunging forward and of beginning to use the hands is the central fact in the response of the angry individual, and is, for that reason, likely to be the only one that engages our attention. But it is true to say that the whole body participates in the response in some form or other. The eyes, the brows, the toes, and any number of other organs or systems of organs are involved in the angry response and can in a sense be said to help along the central response by a kind of sympathetic imitation. In other words, we have reason to believe that the particular part of the body that carries out a given act is always accompanied by other segments of the organism, which lend their consent, as it were, in symbolic form. It is essentially artificial, for instance, to think of the expression of wonder as bound up with the staring eyes alone. There will be something about the tension of the hands and about the whole set of the organism that is in some manner corroborative of what the eyes disclose. If, for one reason or another, the central expressive organ or system of organs is inhibited, the energy of the impulse may concentrate in some other part of the organism, so that the secondary expressive symbol may become *the* symbol *par excellence*. The more highly evolved we become as socialized individuals whose business it is to inhibit many of our expressive impulses, the more likely it is that these impulses find lodgment in parts of the organism that were not primarily designed, so to speak, for such expressions. The facts that I allude to are familiar enough, though they are probably rarely seen in their true generality. If I cannot box a man on the ear, I can at least double my fist behind my back or quietly stick out my tongue at him when he is not looking. These are merely overemphasized symbols of a type which are present in embryo in the natural consummation of the striking gesture. The tongue darts forward as a functionally ineffective but symbolically relieving substitute for the striking act itself.

Let us now return to speech. There is no reason to believe that speech articulations are different from any other expressions of the human body. At moments of intense excitement, when the current patterns of society fall away from us, the articulatory apparatus is very likely to regress into its primitive condition, and we produce all kinds of involuntary sounds that are highly expressive of our

emotions or impulses. In ordinary life these emotions and impulses merely color speech, which has come to be an essentially denotive system. But we may surmise that in the remote past speech was neither more nor less than a series of auditory gestures, directly symbolizing various types of adjustment to the environment. These auditory gestures would have arisen, then, as substitutive symbols for activities or other expressions which it was not possible or convenient to effect at the time. Thus, one's natural impulse in describing a large object is to move the arms in a more or less circular fashion suggesting the notion of bigness. According to the theory that we are now developing, other parts of the organism would be expressing the notion of bigness in other and more indirect ways. The speech apparatus would help along in the expressive symbolism by parting the lips, dropping the tongue as low as possible, rounding the lips, sinking the pitch of the voice, and in other ways.

If anyone is inclined to doubt the reality of such involuntary symbolisms in speech, let him try the following experiment, which I have myself tried a number of times with practically 100 per cent success. Let him tell a number of people, or a class, that there are three imaginary words: "la" (rhyming with "pa"), "law," and "lee," all meaning "table," but with a connotation of difference of size. Let them then tell which of these three hypothetical words indicates the big table, which the little table, and which the middle-sized table. I think it will be found that the normal English-speaking person, or French-speaking person, for that matter, will think of "lee" as symbolizing the small table, "law" the big table, and "la" the middle-sized table or table *par excellence*. This simply means that even at this late day we have not lost the feeling for the gesture significance of sounds and combinations of sounds. If we examine these three imaginary words more closely from the phonetic point of view, we find that the responses are well justified. The pronunciation of the vowel "ee" of "lee" is such as to demand a shortening of the distance between the tongue and the roof of the mouth, as contrasted with the pronunciation of the "a" of "la," in which the tongue articulates lower and farther back. Similarly, in "law" the tongue drops still more, the lower jaw also drops a little, and there is a slight tendency toward lip rounding. These phonetic

modifications amount to gestures, the "ee" gesture being in effect an expressive symbol for smallness, the "aw" gesture a similarly expressive symbol for bigness.

All that is claimed here is that if we see sound articulations as highly variable and intuitively intelligible symbolic gestures, we have all we need to explain the phenomenon we call speech. The precise how and when and where of the historical development of speech is of course another matter. We must assume that speech expressiveness was highly variable, in an individual sense, to begin with; that only very slowly and painfully did groups of individuals come to look upon certain of these symbols as possessing a fixed symbolic significance; that once an expressive symbolism had been fixed by social habit, it could lose its expressive content and take on a denotive one, as in the case of the pantomimic gesture we discussed before; and that, finally, owing to the changes, unconscious and ceaseless, which set in to blur the original outlines of any social pattern of conduct, the actual sounds used for any symbol of reference would in course of time depart so widely from their original form as to obscure the whole mechanism of gesture symbolism which gave rise to the speech process in the first place. It should be carefully noted that this theory of the nature and development of speech is only superficially similar to the older interjectional and onomatopoetic theories of speech which used to be current in linguistic circles. If our view of the nature of speech is correct, it follows that the denotive function of speech, which we now conceive to be its primary function, is in actual fact a secondary one, just as it is a secondary fact that one shakes one's fist at an enemy not in order to initiate the act of striking, but to indicate in a picturesquely symbolic manner that one has no use for him and might punch him soundly under appropriate circumstances. It may be suggested at this point that students of speech psychology could hardly do better than work out experiments intended to test to what extent imaginary speech forms can be constructed that are capable of intuitive interpretation in a primary symbolic sense. We see that language, in short, has embodied two distinct strata of symbolic expression, a primary gesture symbolism and a secondary referential one which has largely swamped the former. We

can, therefore, see why it is that all normal speech involves a conflict between, or intertwining of, two distinct strata of expression or types of mechanism, one of which has to do with direct expression, the other with indirect or denotive expression.

It is legitimate to ask why language, a system of articulated and perceived sounds, is the one kind of symbolic system that all human beings have developed in the course of cultural evolution. I believe that the answer is not difficult to find. Most of the available parts of the human organism are in constant demand for directly functional purposes. This was even more true in the earliest stages of human development than today. The muscles of the hands and feet were too busily engaged in grasping, striking, walking, running, climbing, and other directly useful activities to make it possible for a successful symbolism to develop with their aid alone. The case was different with the so-called "organs of speech." The primary purpose of these organs, which include the larynx (more particularly the glottal cords), the nose, the palate, the tongue, the teeth, and the lips, is respiration, smelling, and the handling of food, of which the first and the last are by far the most important. Respiration is so nearly automatic a type of behavior that any symbolisms that might be secondarily worked out with the help of the larynx, the nose, and the mouth would interfere with it to only a slight extent. The chewing and swallowing of food is far less automatic, but occurs so seldom in actual practice that the organs needed for these important acts are most of the time left free for secondary activities. In other words, they are in a strategic position for the development of just such secondary symbolisms as we have shown were within the reach of all other parts of the organism as well. If this is true, speech is what it is, not because there is a mystic connection between articulated sounds and thought, or the process of symbolization, but merely because the general tendency of the human body to develop symbolic modes of expression over and above the directly functional ones found favorable soil in the tract known as the "organs of speech." An individual who does not need to earn his living by the constant use of his fingers for primary purposes may develop great virtuosity as a pianist. In precisely the same way the organs of speech developed

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special social virtuosity as symbol executants because they were idle enough of the time to make such a luxury possible.

The two aspects of speech, expressive and referential, are rarely seen in their purity. In the workaday world they are constantly intertwining their functions in countless compromises, and it is this highly variable process of compromise that is so largely responsible for the misunderstandings and clashes of human contact. If words really meant what we say they mean, there should be little room for misunderstandings; but it is of course only too true that they rarely mean quite what in our moments of intellectual isolation we claim as their due significance, but that they convey thousands of connotations over and above this ostensible meaning of theirs. Now, it is clear that with the growth of the power of analysis there is an ever increasing demand for the development of a perfectly objective and unemotional set of symbols that can stay put and mean exactly what they are supposed to mean—no more, no less. The more exact a system of thought becomes, the more impatient it is apt to be with the rough-and-ready symbolisms of normal speech. Hence it is not surprising that the mathematical disciplines have been driven to invent a great many special symbols which can be defined with complete accuracy and which will allow no room for expressive modifications. A plus sign that left any room for doubt as to its meaning would be useless. But language as ordinarily handled by society is soaked with overtones or connotations that are nicely felt by the members of the particular society that makes use of one of its specific forms, but that it is difficult to convey to outsiders. One may know the vocabulary and the grammar of a foreign language ever so well, but one is not likely to use it with that unconscious appeal to the expressive values that attach to those words and forms unless one has spent a considerable time among the people who use it or unless one as a child is very much more impressionable to these values than we adults normally are.

Language would be a poorer thing than it is if it were a denotive system alone. But we must not be so sentimental as to overlook the equally obvious fact that it is precisely the expressiveness of particular languages that makes any one of them a misleading or even a dangerous tool for the problem of sheer reference. The

necessity of evolving a complicated denotive symbolism that is absolutely, or so far as may be, devoid of expressive values is not very keenly felt by normal human beings, but it is more than likely that as time goes on this purely speculative need will become more and more imperative. International complications, for instance, must be avoided at all costs, and there is perhaps no one device which would do more to eliminate the subtle misunderstandings which arise from the use of language as we ordinarily handle it than a system of symbols which are as cold-blooded as those used by the mathematicians, but which are inclusive enough to provide for every possible kind of communication. We must, then, conceive the essential task of an international language to be not so much the choosing of this or that particular form of speech, but the creation of a system of symbols of maximal simplicity and of absolute lack of ambiguity. The task of constructing such a system is far more difficult than it seems to be at first blush. Esperanto and other systems that have been suggested are to an amazing extent little more than translations into new terms of old habits of reference, the expressive "plus" being always included. One of the great tasks of the future may be the creation of such an objective language of reference from which every possible nuance of individual or social expressiveness has been removed. Perhaps such a system is philosophically inconceivable; but the history of mathematical and other scientific symbolisms shows clearly that the tendency has been toward the creation of just such a system. It goes without saying, however, that a purely denotive language need not and is not in the least likely to supersede the actual languages in use today, with their bewildering flexibility of individual and social expressiveness. These are likely to remain for incalculable periods to come.

Editorial Note

The English Journal 16 (1927), 421–433.

Language and Philology. By Roland G. Kent. Boston: Marshall Jones Company (1923). Pp. vii + 174[1].

[85] Professor Kent's little book, Language and Philology, which is one of the series entitled Our Debt to Greece and Rome, edited by Professors G. D. Hadzsits and D. M. Robinson, is an excellent and most readable statement of the extent of our linguistic indebtedness to the classical languages. The title is obviously, but inoffensively, misleading, for by "Language" is meant 'Present-day English, Particularly in its Written Form', and "Philology" means 'Latin and Greek'.

How powerfully English leans on these languages has perhaps never before been made so evident. Our vocabulary, our apparatus of prefixes and suffixes, our alphabet are eloquent of the far-reaching cultural influence exerted at various times by the classical tradition. The most frenzied purist can no more successfully de-Hellenize or de-Latinize our everyday English speech than a reformer can oust the decimal system of notation and put a duodecimal one in its place, or than a bolshevistic biologist can persuade us to give up the charming ritual of our meals and revert to the more elemental law of 'bite when hungry'.

Professor Kent writes in just that simple, patient, well-documented style which is needed to make a somewhat technical array of facts intelligible and interesting to the lay public. Here and there he fits the words he discusses into their background of use and in this way gives his discourse a liveliness—at times even a jauntiness—which is surely not native to lists of words as such. Only seldom does he seem to fall a victim to the temptation of saying merely pretty things, as when certain words composed of Latin elements are said to be "as truly part of our debt to the Latin language as though they had fallen trippingly from the lips of Cicero against Catiline". *O tempora, O mores!*

A very significant passage occurs at the end of the chapter on Grammatical Studies (128–138). It reads (138):

> Notwithstanding these differences between Latin and modern English, the oldest form of English, namely Anglo-Saxon, was a highly inflected language very similar to Latin in forms and in syntax; and the essentials of case in nouns, of person and number in verbs, of the use of the subjunctive mood, and of the various agreements between different members of the sentence, still abide in English, and are rarely well understood except by those who know them in their Latin aspect.

There is such a thing as seeing English through Latin and Greek eyes, but there is also the even more insidious danger of exaggerating the degree of fundamental structural difference between English and its more highly inflected prototypes and relatives. Analogies that it has been somewhat fashionable to point out between English and such thoroughgoing analytic languages as Chinese are superficial at

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[1] The volumes of the Series Our Debt to Greece and Rome are published now by Messrs. Longmans, Green and Company, New York City. C. K.>.

best. It is not a question of how complex is English morphology as compared with that of Anglo-Saxon or Latin but of what are the basic lines of its patterning, and these are as undeniably Indo-European and 'inflective'—or, as I should prefer to say, 'fusional'—in technique and "mixed-relational" in principle as are those of Sanskrit itself. Just as it is more significant to compare the structural principles of a humble frame house with those of a magnificent mansion of Occidental type than to dilate on its similarity, as regards economy of means, to an Indian tepee or an Eskimo snow house, so too English should be seen with an eye which [86] has learned to follow the more involved lines of Latin and Greek and Anglo-Saxon structure.

The contents of the book are as follows:

I. Introduction (3–7); II. Language Relationship and Behavior (8–13); III. The Greek Language (14–18); IV. The Latin Language (19–25); V. The English Language (26–38); VI. Statistics and Examples (39–57); VII. Our Present-Day Vocabulary (58–76); VIII. Prefixes (77–90); IX. Suffixes (91–108); X. Words and Forms (109–127); XI. Grammatical Studies (128–138); XII. Grammatical Terminology (139–143); XIII. The Alphabet and Writing (144–155); Conclusion: Latinless English (156–158); Notes (161–172); Bibliography (173–174).

UNIVERSITY OF CHICAGO EDWARD SAPIR

Editorial Note

The Classical Weekly 21 (1928), 85–86.

THE STATUS OF LINGUISTICS AS A SCIENCE[1]

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[The long tried methods of Indo-European linguistics have proved themselves by the success with which they have been applied to other fields, for instance Central Algonkian and Athabaskan. An increasing interest in linguistics may be noted among workers in anthropology, culture history, sociology, psychology, and philosophy. For all of them linguistics is of basic importance: its data and methods show better than those of any other discipline dealing with socialized behavior the possibility of a truly scientific study of society. Linguists should, on the other hand, become aware of what their science may mean for the interpretation of human conduct in general.]

Linguistics may be said to have begun its scientific career with the comparative study and reconstruction of the Indo-European languages. In the course of their detailed researches Indo-European linguists have gradually developed a technique which is probably more nearly perfect than that of any other science dealing with man's institutions. Many of the formulations of comparative Indo-European linguistics have a neatness and a regularity which recall the formulae, or the so-called laws, of natural science. Historical and comparative linguistics has been built up chiefly on the basis of the hypothesis that sound changes are regular and that most morphological readjustments in language follow as by-products in the wake of these regular phonetic developments. There are many who would be disposed to deny the psychological necessity of the regularity of sound change, but it remains true, as a matter of actual linguistic experience, that faith in such regularity has been the most successful approach to the historic problems of language. Why such regularities should be found and why it is necessary to assume regularity of sound change are questions that the average linguist is perhaps unable to answer satisfactorily. But it does not follow that he can expect to improve his methods by discarding well tested hypotheses and

[1] Read at a joint meeting of the LINGUISTIC SOCIETY OF AMERICA, the AMERICAN ANTHROPOLOGICAL ASSOCIATION, and Sections H and L of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, New York City, December 28, 1928.

throwing the field open to all manner of psychological and sociological explanations that do not immediately tie up with what we actually know about the historical behavior of language. A psychological and a sociological interpretation of the kind of regularity in linguistic change with which students of language have long been familiar are indeed desirable and even necessary. But neither psychology nor sociology is in a position to tell linguistics what kinds of historical formulations the linguist is to make. At best these disciplines can but urge the linguist to concern himself in a more vital manner than heretofore with the problem of seeing linguistic history in the larger framework of human behavior in the individual and in society.

The methods developed by the Indo-Europeanists have been applied with marked success to other groups of languages. It is abundantly clear that they apply just as rigorously to the unwritten primitive languages of Africa and America as to the better known forms of speech of the more sophisticated peoples. It is probably in the languages of these more cultured peoples that the fundamental regularity of linguistic processes has been most often crossed by the operation of such conflicting tendencies as borrowing from other languages, dialectic blending, and social differentiations of speech. The more we devote ourselves to the comparative study of the languages of a primitive linguistic stock, the more clearly we realize that phonetic law and analogical leveling are the only satisfactory key to the unravelling of the development of dialects and languages from a common base. Professor Leonard Bloomfield's experiences with Central Algonkian and my own with Athabaskan leave nothing to be desired in this respect and are a complete answer to those who find it difficult to accept the large scale regularity of the operation of all those unconscious linguistic forces which in their totality give us regular phonetic change and morphological readjustment on the basis of such change. It is not merely theoretically possible to predict the correctness of specific forms among unlettered peoples on the basis of such phonetic laws as have been worked out for them—such predictions are already on record in considerable number. There can be no doubt that the methods first developed in the field of Indo-European linguistics are destined to play a consistently important rôle in the study of all other groups of languages, and that it is through them and through their gradual extension that we can hope to arrive at significant historical inferences as to the remoter relations between groups of languages that show few superficial signs of a common origin.

It is the main purpose of this paper, however, not to insist on what

linguistics has already accomplished, but rather to point out some of the connections between linguistics and other scientific disciplines, and above all to raise the question in what sense linguistics can be called a 'science'.

The value of linguistics for anthropology and culture history has long been recognized. As linguistic research has proceeded, language has proved useful as a tool in the sciences of man and has itself required and obtained a great deal of light from the rest of these sciences. It is difficult for a modern linguist to confine himself to his traditional subject matter. Unless he is somewhat unimaginative, he cannot but share in some or all of the mutual interests which tie up linguistics with anthropology and culture history, with sociology, with psychology, with philosophy, and, more remotely, with physics and physiology.

Language is becoming increasingly valuable as a guide to the scientific study of a given culture. In a sense, the network of cultural patterns of a civilization is indexed in the language which expresses that civilization. It is an illusion to think that we can understand the significant outlines of a culture through sheer observation and without the guide of the linguistic symbolism which makes these outlines significant and intelligible to society. Some day the attempt to master a primitive culture without the help of the language of its society will seem as amateurish as the labors of a historian who cannot handle the original documents of the civilization which he is describing.

Language is a guide to 'social reality'. Though language is not ordinarily thought of as of essential interest to the students of social science, it powerfully conditions all our thinking about social problems and processes. Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the 'real world' is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached.

The understanding of a simple poem, for instance, involves not merely an understanding of the single words in their average significance, but

a full comprehension of the whole life of the community as it is mirrored in the words, or as it is suggested by their overtones. Even comparatively simple acts of perception are very much more at the mercy of the social patterns called words than we might suppose. If one draws some dozen lines, for instance, of different shapes, one perceives them as divisible into such categories as 'straight', 'crooked', 'curved', 'zigzag' because of the classificatory suggestiveness of the linguistic terms themselves. We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation.

For the more fundamental problems of the student of human culture, therefore, a knowledge of linguistic mechanisms and historical developments is certain to become more and more important as our analysis of social behavior becomes more refined. From this standpoint we may think of language as the *symbolic guide to culture.* In another sense too linguistics is of great assistance in the study of cultural phenomena. Many cultural objects and ideas have been diffused in connection with their terminology, so that a study of the distribution of culturally significant terms often throws unexpected light on the history of inventions and ideas. This type of research, already fruitful in European and Asiatic culture history, is destined to be of great assistance in the reconstruction of primitive cultures.

The value of linguistics for sociology in the narrower sense of the word is just as real as for the anthropological theorist. Sociologists are necessarily interested in the technique of communication between human beings. From this standpoint language facilitation and language barriers are of the utmost importance and must be studied in their interplay with a host of other factors that make for ease or difficulty of transmission of ideas and patterns of behavior. Furthermore, the sociologist is necessarily interested in the symbolic significance, in a social sense, of the linguistic differences which appear in any large community. Correctness of speech or what might be called 'social style' in speech is of far more than aesthetic or grammatical interest. Peculiar modes of pronunciation, characteristic turns of phrase, slangy forms of speech, occupational terminologies of all sorts—these are so many symbols of the manifold ways in which society arranges itself and are of crucial importance for the understanding of the development of individual and social attitudes. Yet it will not be possible for a social student to evaluate such phenomena unless he has very clear notions of the linguistic background against which social symbolisms of a linguistic sort are to be estimated.

It is very encouraging that the psychologist has been concerning himself more and more with linguistic data. So far it is doubtful if he has been able to contribute very much to the understanding of language behavior beyond what the linguist has himself been able to formulate on the basis of his data. But the feeling is growing rapidly, and justly, that the psychological explanations of the linguists themselves need to be restated in more general terms, so that purely linguistic facts may be seen as specialized forms of symbolic behavior. The psychologists have perhaps too narrowly concerned themselves with the simple psychophysical bases of speech and have not penetrated very deeply into the study of its symbolic nature. This is probably due to the fact that psychologists in general are as yet too little aware of the fundamental importance of symbolism in behavior. It is not unlikely that it is precisely in the field of symbolism that linguistic forms and processes will contribute most to the enrichment of psychology.

All activities may be thought of as either definitely functional in the immediate sense, or as symbolic, or as a blend of the two. Thus, if I shove open a door in order to enter a house, the significance of the act lies precisely in its allowing me to make an easy entry. But if I 'knock at the door', a little reflection shows that the knock in itself does not open the door for me. It serves merely as a sign that somebody is to come to open it for me. To knock on the door is a substitute for the more primitive act of shoving it open of one's own accord. We have here the rudiments of what might be called language. A vast number of acts are language acts in this crude sense. That is, they are not of importance to us because of the work they immediately do, but because they serve as mediating signs of other more important acts. A primitive sign has some objective resemblance to what it takes the place of or points to. Thus, knocking at the door has a definite relation to intended activity upon the door itself. Some signs become abbreviated forms of functional activities which can be used for reference. Thus, shaking one's fist at a person is an abbreviated and relatively harmless way of actually punching him. If such a gesture becomes sufficiently expressive to society to constitute in some sort the equivalent of an abuse or a threat, it may be looked on as a symbol in the proper sense of the word.

Symbols of this sort are primary in that the resemblance of the symbol to what it stands for is still fairly evident. As time goes on, symbols become so completely changed in form as to lose all outward connection with what they stand for. Thus, there is no resemblance between a piece of bunting colored red, white, and blue, and the United

States of America,—itself a complex and not easily definable notion. The flag may therefore be looked upon as a secondary or referential symbol. The way to understand language psychologically, it seems, is to see it as the most complicated example of such a secondary or referential set of symbols that society has evolved. It may be that originally the primal cries or other types of symbols developed by man had some connection with certain emotions or attitudes or notions. But a connection is no longer directly traceable between words, or combinations of words, and what they refer to.

Linguistics is at once one of the most difficult and one of the most fundamental fields of inquiry. It is probable that a really fruitful integration of linguistic and psychological studies lies still in the future. We may suspect that linguistics is destined to have a very special value for configurative psychology ('Gestalt psychology'), for, of all forms of culture, it seems that language is that one which develops its fundamental patterns with relatively the most complete detachment from other types of cultural patterning. Linguistics may thus hope to become something of a guide to the understanding of the 'psychological geography' of culture in the large. In ordinary life the basic symbolisms of behavior are densely overlaid by cross-functional patterns of a bewildering variety. It is because every isolated act in human behavior is the meeting point of many distinct configurations that it is so difficult for most of us to arrive at the notion of contextual and non-contextual form in behavior. Linguistics would seem to have a very peculiar value for configurative studies because the patterning of language is to a very appreciable extent self-contained and not significantly at the mercy of intercrossing patterns of a non-linguistic type.

It is very notable that philosophy in recent years has concerned itself with problems of language as never before. The time is long past when grammatical forms and processes can be naïvely translated by philosophers into metaphysical entities. The philosopher needs to understand language if only to protect himself against his own language habits, and so it is not surprising that philosophy, in attempting to free logic from the trammels of grammar and to understand knowledge and the meaning of symbolism, is compelled to make a preliminary critique of the linguistic process itself. Linguists should be in an excellent position to assist in the process of making clear to ourselves the implications of our terms and linguistic procedures. Of all students of human behavior, the linguist should by the very nature of his subject matter be the most relativist in feeling, the least taken in by the forms of his own speech.

A word as to the relation between linguistics and the natural sciences. Students of linguistics have been greatly indebted for their technical equipment to the natural sciences, particularly physics and physiology. Phonetics, a necessary prerequisite for all exact work in linguistics, is impossible without some grounding in acoustics and the physiology of the speech organs. It is particularly those students of language who are more interested in the realistic details of actual speech behavior in the individual than in the socialized patterns of language who must have constant recourse to the natural sciences. But it is far from unlikely that the accumulated experience of linguistic research may provide more than one valuable hint for the setting up of problems of research to acoustics and physiology themselves.

All in all, it is clear that the interest in language has in recent years been transcending the strictly linguistic circles. This is inevitable, for an understanding of language mechanisms is necessary for the study of both historical problems and problems of human behavior. One can only hope that linguists will become increasingly aware of the significance of their subject in the general field of science and will not stand aloof behind a tradition that threatens to become scholastic when not vitalized by interests which lie beyond the formal interest in language itself.

Where, finally, does linguistics stand as a science? Does it belong to the natural sciences, with biology, or to the social sciences? There seem to be two facts which are responsible for the persistent tendency to view linguistic data from a biological point of view. In the first place, there is the obvious fact that the actual technique of language behavior involves very specific adjustments of a physiological sort. In the second place, the regularity and typicality of linguistic processes leads to a quasi-romantic feeling of contrast with the apparently free and undetermined behavior of human beings studied from the standpoint of culture. But the regularity of sound change is only superficially analogous to a biological automatism. It is precisely because language is as strictly socialized a type of human behavior as anything else in culture and yet betrays in its outlines and tendencies such regularities as only the natural scientist is in the habit of formulating, that linguistics is of strategic importance for the methodology of social science. Behind the apparent lawlessness of social phenomena there is a regularity of configuration and tendency which is just as real as the regularity of physical processes in a mechanical world, though it is a regularity of infinitely less apparent rigidity and of another mode of apprehension on our

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part. Language is primarily a cultural or social product and must be understood as such. Its regularity and formal development rest on considerations of a biological and psychological nature, to be sure. But this regularity and our underlying unconsciousness of its typical forms do not make of linguistics a mere adjunct to either biology or psychology. Better than any other social science, linguistics shows by its data and methods, necessarily more easily defined than the data and methods of any other type of discipline dealing with socialized behavior, the possibility of a truly scientific study of society which does not ape the methods nor attempt to adopt unrevised the concepts of the natural sciences. It is peculiarly important that linguists, who are often accused, and accused justly, of failure to look beyond the pretty patterns of their subject matter, should become aware of what their science may mean for the interpretation of human conduct in general. Whether they like it or not, they must become increasingly concerned with the many anthropological, sociological, and psychological problems which invade the field of language.

Editorial Note

Language 5 (1929), 207–214. [Reprinted in: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 160–166]

The following error in the originally published version has been corrected directly into the text printed here (the page reference is to the original):
p. 210, l. 23: values (correct: value)

A STUDY IN PHONETIC SYMBOLISM

BY EDWARD SAPIR

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The symbolism of language is, or may be, twofold. By far the greater portion of its recognized content and structure is symbolic in a purely referential sense; in other words, the meaningful combinations of vowels and consonants (words, significant parts of words, and word groupings) derive their functional significance from the arbitrary associations between them and their meanings established by various societies in the course of an uncontrollably long period of historical development. That these associations are essentially arbitrary or conventional may be seen at once by considering such a proportion as

phonetic entity 'boy': idea (or reference) 'boy' = phonetic entity 'man': idea (or reference) 'man.'

In passing from the notion of 'boy' to that of 'man' we experience a definite feeling of relationship between the two notions, that of increase in size and age. But the purely phonetic relationship of 'boy' : 'man' takes no account of this. So far as the referential symbolism of language is concerned, the words 'boy' and 'man' are discrete, incomparable phonetic entities, the sound-group b-o-y having no more to do with the sound-group m-a-n, in a possible scale of evaluated phonetic variants, than any randomly selected pair of sound-groups, say 'run' and 'bad,' have to do with each other.

This completely dissociated type of symbolism is of course familiar; it is of the very essence of linguistic form. But

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there are other types of linguistic expression that suggest a more fundamental, a psychologically primary, sort of symbolism.[2] As examples may be given the interrogative tone in such a spoken sentence as "You say he's dead?" in comparison with the simple declarative tone of the corresponding "You say he's dead"; further, the emphatically diminutive *ee* of *teeny* as contrasted with the normal *i* of *tiny*. In both of these examples the phonetic difference is undoubtedly felt as somehow directly expressive of the difference of meaning in a sense in which the contrast between say 'boy' and 'man' is not. We may call this type of symbolism 'expressive' as contrasted with the merely 'referential' symbolism which was first spoken of. It goes without saying that in actual speech referential and expressive symbolisms are pooled in a single expressive stream, the socialization of the tendency to expressive symbolism being far less extreme, in the great majority of languages, than of the tendency to fix references as such.

We may legitimately ask if there are, in the speech of a considerable percentage of normal individuals, certain preferential tendencies to expressive symbolism not only in the field of speech dynamics (stress, pitch, and varying quantities), but also in the field of phonetic material as ordinarily understood. Can it be shown, in other words, that symbolisms tend to work themselves out in vocalic and consonantal contrasts and scales in spite of the arbitrary allocations of these same vowels and consonants in the strictly socialized field of reference? The present paper is a preliminary report of certain aspects of a study, still in progress, intended to probe into any such latent symbolisms as may be thought to exist. The field of inquiry is vast and difficult to chart and I cannot hope to have guarded against all the possible fallacies of interpretation. For the present I have limited myself to the meaning contrast 'large' : 'small' as offering the most likely chance of arriving at relatively tangible results.

The main object of the study is to ascertain if there

[2] For the two symbolic layers in speech, as in all expression, see E. Sapir, Language as a form of human behavior, *Engl. J.*, 1927, 16, 421–433.

tends to be a feeling of the symbolic magnitude value of certain differences in vowels and consonants, regardless of the particular associations due to the presence of these vowels and consonants in meaningful words in the language of the speaker. The results so far obtained seem to go far in demonstrating the reality of such feelings, whatever may be their cause. It has also become very clear that individuals differ a good deal in the matter of sensitiveness to the symbolic suggestiveness of special sound contrasts.

A number of distinct schedules have been devised and applied in the research. In the early stages of the work the various types of sound difference were studied independently. For instance, the contrast between the vowel *a* and the vowel *i* (the phonetic or continental values are intended) was illustrated in every one of sixty pairs of stimulus words, the subject being requested to indicate in each case which of the two in themselves meaningless words meant the larger and which the smaller variety of an arbitrarily selected meaning. For example, the meaningless words *mal* and *mil* were pronounced in that order and given the arbitrary meaning 'table.' The subject decided whether *mal* seemed to symbolize a large or a small table as contrasted with the word *mil.*

In the first experiments schedules of sixty stimulus word-pairs were used, each of which was divided into two sections. The first thirty word-pairs involved only such sounds as the subject, an English-speaking person, would be familiar with, the second set of thirty word-pairs, while still illustrating the same phonetic contrast as the first thirty, say that of *a* to *i*, also involved sounds that the subject was not familiar with. Each of the two sets of thirty was further subdivided into functional groups: nouns, verbs with reference to large or small subject of verb, adjectives with reference to large or small things, verbs with reference to large or small object of verb, and verbs with reference to intense or normal degree of activity. It is important to note that the words were so selected as to avoid associations with meaningful words and it was the special purpose of the second set of thirty word-pairs to remove the subject still further from the intercurrent influence of meaningful linguistic associations.

If the results obtained from a considerable number of individuals can be relied upon as symptomatic, the influence of accidental, meaningful linguistic associations is less than might have been supposed, for the percentage of responses in favor of one of the two vowels as symbolizing the large object tended to be little less, if at all, in the second set of word-pairs than in the first. For example, Subj. IK found that of the first thirty word-pairs illustrating a contrast between the vowels *a* and *i* twenty-two examples of *a* "naturally" carried with them the connotation "large," five examples

of *i* carried this connotation, and three word-pairs were responded to indifferently. The effective score in favor of *a* as the vowel inherently symbolizing a large rather than a small reference was 22/27 or 81 per cent. In the second set of thirty word-pairs illustrating the same vocalic contrast, 21 of the words involving the vowel *a* were said to connote the large reference, 5 with the vowel *i* connoted the small reference, and 4 were indifferent. Here the effective score in favor of the symbolic value of the vowel *a* as large by contrast with *i* is 21/26 or, again, 81 per cent. In the case of the vowel contrast *a* to *e* (with the short value of the French *e*, as in *été*) IK's effective score in favor of the *a* vowel as connoting the larger reference was 24/29 or 83 per cent for the first 30 word-pairs, 73 per cent for the second 30 word-pairs.

The essential points that seemed to appear from these first experiments with individuals were; (1) that vocalic and consonantal contrasts tended with many, indeed with most, individuals to have a definite symbolic feeling-significance that seemed to have little relation to the associative values of actual words, (2) that it made surprisingly little difference whether the phonetic contrast was contained in a phonetically "possible" or a phonetically "impossible" context and (3) that the certainty of the symbolic distinction tended to vary with the nature of the phonetic contrast. The last point, which is important, will be discussed later on in this report.

These earlier experiments with individuals, though revealing, were felt as the work proceeded to be deficient in one important respect, namely, that the simple nature of the vocalic or consonantal contrast in a set of word-pairs might be expected to lead to a too ready systematization of responses on the part of the subject. In other words, the average subject could not help noticing after responding to a few stimuli that a certain consistency in the responses would naturally be expected, and that if the vowel *a*, for example, as contrasted with *e* or *i*, is felt satisfactorily to symbolize the larger of two objects, all other examples of word-pairs illustrating the same vocalic contrast should be dealt with in the same manner. The primary purpose of the experiment, however, was to elicit spontaneous feelings of symbolic contrast, unrevised by any judgment as to consistency of response. For this reason a further and, it is believed, much more efficient experiment was devised consisting of 100 word-pairs involving every type of phonetic contrast that was investigated. These hundred word-pairs were not arranged

in any logical order, nor was the order of the contrasted phonetic elements in any particular entry necessarily the same as in another entry involving the same contrast. In the table that was finally adopted the first word-pair illustrated the contrast between *a* and *i*, the second the contrast between *e* and *a*, the third the contrast between *z* and *s*, and so on through the list. The contrast between *a* and *i* was illustrated not only in Entry 1 but also in Entries 41, 81, and 87. In this way, it was hoped, systematization on the part of the subject was necessarily hindered, if not entirely blocked, and the responses actually obtained may be looked upon as normally spontaneous feeling judgments following in the wake of an initial suggestion as to preferred class of symbolic response (*i.e.* variations in magnitude).

For this second experiment 500 subjects were employed, most of them students of the University of Chicago High School. The subjects were eventually analyzed into the following groups; 6 cases of 11-year-old children, 30 of 12 years, 86 of 13 years, 94 of 14 years, 124 of 15 years, 81 of 16 years, 33 of 17 years, 10 of 18 years, 21 University of Chicago students, 8 adults who were not students and 7 Chinese. The subjects were provided with forms in which there were blank spaces for each of the entries, and they were carefully instructed to check off the first of the two stimulus words announced by the investigator as to whether it symbolized the larger or the smaller reference. If the response was indifferent, no check was to be entered in either the large or the small column. Very little difficulty was experienced in explaining the conditions of the experiment, which seemed to be enjoyed by the great majority of the subjects as a rather interesting game. It is believed that the results obtained are as reliable as material of this kind can be, every precaution having been taken to arrange conditions favoring simple and unambiguous responses and only the investigator himself pronouncing the stimulus words, in order that all confusion due to slight variations of pronunciation might be avoided.

The phonetic contrasts may be classified on phonetic and acoustic grounds into five main groups. There are also two minor groups which are of lesser interest. In the first group the contrasting vowels belong to the series *a*, *ä*, *ɛ*, *e*, *i*. The pronunciation of these vowels, as of all other vowels, was *quantitatively uniform in a given pair* in order that the independent symbolic suggestiveness of quantity differences as such be ruled out of consideration where quality alone was being studied. The phonetic values of these vowels were respectively those of *a* of German *Mann* (*a*), *a* of English *hat* (*ä*), *e* of English *met* (*ɛ*), *e* of French *été* (*e*), *i* of French

fini (*i*). It will be observed that the phonetic contrast is gradually lessened within the scale as one moves from *a* to *i*. Thus, *a* to *i* affords the greatest objective contrast, *ä* to *i* or *a* to *e* a lesser contrast, *ɛ* to *i* or *a* to *ɛ* a still lesser one, and *a* to *ä* or *ä* to *ɛ* or *ɛ* to *e* or *e* to *i* a minimal contrast. In other words, on purely objective phonetic grounds, one might imagine that the responses would tend to be further removed from a purely random or 50-50 distribution the greater the contrast between the vowels. It was therefore of great interest to determine not only whether there were preferred symbolisms, but also whether the varying percentages of response bore a fairly close relation to objective differences in the sounds themselves as determined on phonetic and acoustic grounds.

The second group of word-pairs illustrates the contrast between vowels on the scale *a*, *ɔ*, *o*, *u*, *i.e.* a scale with progressive lip-rounding. The third group illustrates contrasts between rounded back vowels (*u*, *o*, *ɔ*) and unrounded front vowels (*i*, *e*, *ɛ*, *ä*). In the fourth group of word-pairs there was illustrated the contrast between voiced and voiceless consonants, *e.g.* between *z* and *s*, *v* and *f*, *b* and *p*. The fifth group illustrates the contrast between stopped consonants and spirants or fricatives, *e.g.* between *f* and *p*, *x* (*ch* of German *Bach*) and *k*.

It would be quite impossible to report on all the details of the experiment in this place. I shall content myself with giving two selected tables. The first shows the distribution of responses for the word-pairs illustrating the contrast between *a* and *i*, classified according to the groups of subjects (11–18 yrs, university students, adults and Chinese).

Table I

Percentage of responses showing preference for *a* vs. *i* to symbolize 'large'

Entry no.	Obs. 6 Age 11	30 12	86 13	94 14	124 15	81 16	33 17	10 18	21 Univ.	8 Adlts.	7 Chin.
1.....	83.3	86.7	90.6	92.3	83.1	84.0	78.8	80.0	85.0	100.0	100.0
41.....	100.0	70.0	82.7	78.0	76.4	71.6	69.7	50.0	95.2	100.0	85.7
81.....	83.3	93.3	74.7	72.2	81.8	80.0	77.4	100.0	70.0	85.7	85.7
87.....	83.3	83.3	84.1	86.0	91.8	86.1	72.7	80.0	90.0	100.0	42.9
Ave....	87.5	83.3	83.0	82.1	83.3	80.4	74.6½	77.5	85.0½	96.4	78.6

It will be observed that the percentage of responses in favor of *a* vs. *i* ranges all the way from about 75 per cent to about 96 per cent. For the largest group of subjects, the 124 fifteen-year-olds, the percentage is as high as 85, while the small number of 11-year-olds reach the figure 87.5. It is obvious that, regardless of infinite differences of an individual nature as to the general symbolic value of this phonetic contrast or as to its specific value in particular cases, English-speaking society does, for some reason or other, feel that of these two vowels, *a*, by and large, is possessed of a greater potential magnitude symbolism than the contrasted vowel *i*. The same feeling seems to be illustrated by the small number of Chinese cases. Furthermore, within the English-speaking community there seems little reason to believe that there is a significant growth in the firmness of the symbolic feeling after the age of 11. The case of the eight adults is not really significant because they consisted of high school teachers of English who answered the forms at the same time as their classes. They would naturally have a more self-conscious attitude toward the problem of sound symbolism than individuals selected at random. In other words, however these symbolisms are fixed, it is probable that they are so fixed at a rather early age and that familiarity with literature is not likely to count as a heavy factor in the situation. These general considerations are borne out by all the other findings, and it is of particular interest to note that the Chinese evidence is nearly always in the same general direction as that of the English-speaking subjects. Further work needs to be done on responses of this kind from younger children and from other groups of foreigners before the age and language factors can be properly evaluated or dismissed as irrelevant.

The second table is an attempt to show the differential symbolic value of the vocalic contrasts in the *a* to *i* series. Four age-groups (13–16), involving 385 subjects, are represented in this table. It was found in comparing the responses to the different vocalic pairs that they tended to arrange themselves roughly into four distinct groups (A, B, C, D).

Table II

Configurated distribution of "*a* : *i*" responses in ages 13–16

	Age 13 (86 cases)	Age 14 (94 cases)	Age 15 (124 cases)	Age 16 (81 cases)
		a : *i* (4 steps) 82.1	*a* : *i* (4 steps) 83.3	
	a : *ɛ* (2 steps) 86.0			
Group A	*ā* : *i* (3 ") 84.7	*ā* : *i* (3 ") 80.3	*ā* : *i* (3 ") 80.0	*ā* : *i* (3 steps) 87.0
	a : *i* (4 ") 83.0			
	ɛ : *i* (2 ") 82.0			*ɛ* : *i* (2 ") 81.8
				a : *i* (4 ") 80.4
		ɛ : *i* (2 steps) 78.2	*ɛ* : *i* (2 steps) 76.8	
		a : *ɛ* (2 ") 76.9	*a* : *ɛ* (2 ") 72.8	*a* : *ɛ* (2 steps) 75.7
Group B	*ā* : *ɛ* (1 step) 76.4	*ā* : *ɛ* (1 ") 74.9		*ā* : *ɛ* (1 ") 74.8
	**a* : *e* (3 steps) 75.3	**a* : *e* (3 ") 73.1		
			e : *i* (1 ") 72.7	
			ā : *ɛ* (1 step) 69.5	
			**a* : *e* (3 steps) 68.6	**a* : *e* (3 steps) 70.7
Group C	*e* : *i* (1 step) 67.8	*e* : *i* (1 step) 67.5		*e* : *i* (1 ") 70.2
	a : *ā* (1 ") 62.5			
		ɛ : *e* (1 ") 60.3		
				ɛ : *e* (1 step) 60.4
Group D		*a* : *ā* (1 step) 56.5	*a* : *ā* (1 step) 59.0	*a* : *ā* (1 ") 58.7
	ɛ : *e* (1 step) 53.6		*ɛ* : *e* (1 ") 58.3	

In the first group, typically illustrated by the contrast between *a* and *i* and *ä* and *i*, the percentage of a response in favor of the vowel nearer *a* of the scale ranged from 80 per cent upward. The second group of responses was found to be somewhat set off from the preceding one by a marked decrease in the percentage of responses favoring the vowel toward *a* of the scale. This group is typically illustrated by the contrast between *a* and *ɛ*, the percentage in favor of the 'larger' vowel running from about 73 per cent to 78 per cent. The third group, illustrated by the typical contrast *e* to *i*, ranges from about 60 per cent to 70 per cent. The last group, that of minimal psychological contrast in the *a* to *i* set, runs below 60 per cent in favor of the vowel toward *a* of the scale.

The table has been arranged chiefly from the point of view of the internal 'hiatus' between the percentages of response within each age-group. It is noteworthy that the 'configurated distribution' of the responses runs fairly parallel in the four age groups both as to the stepwise discriminations which seem to be felt by many of the subjects and as to the actual order of the specific vocalic contrasts when evaluated by means of percentages in favor of the vowel toward *a* of the scale. Naturally, the reality and normal limits of these stepwise discriminations need to be tested by a careful examination of the individual records, supplemented by further experiments.

On the whole, it will be observed that the symbolic discriminations run encouragingly parallel to the objective ones based on phonetic considerations. This may mean that the chances of the responses being to a high degree determined by actual word associations of the language of the subject are slim, the meanings of words not being distributed, so far as known, according to any principle of sound values as such; and, further, that we are really dealing with a measurably independent psychological factor that for want of a better term may be called 'phonetic symbolism.'

One vocalic contrast, however, falls out of the expected picture. This is the *a* to *e* set, which is starred in the table.

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Though the *a* vowel is judged prevailingly 'large' as contrasted with *e*, there seems to be present some factor of hesitation which lessens the value of the contrast. If we go by objective distances between vowels, the *a* to *e* contrast, being a '3-step' one, should have fallen into Group A, instead of which it actually either comes last in Group B or falls even as low as Group C. I believe that a very interesting and sufficient reason can be given for this curious fact. The short vowel *e*, as in French *été*, is not native to the English language. Subjects hearing the vowel *e*, when pronounced in the proximity of *a*, which is acoustically far removed from it, would tend not to hear what was actually pronounced, but to project the characteristic long '*e*-vowel' familiar to us in such words as *raise* or *lake*. In other words, the qualitative symbolism would tend to receive a revision in the opposite sense because of an intercurrent quantitative symbolism. This example is suggestive as illustrating the importance of the linguistic factor vs. the merely phonetic one, though not in the sense in which the term 'linguistic factor' is ordinarily understood. What skews the picture here is probably not the associative power of particular English words but the *phonetic configuration* of English as such.[3] That even this configuration, however, is of limited importance in interpreting the experiment is shown by the fact that in word-pairs illustrating the contrast *e* to *i*, *ɛ* to *e*, the acoustic nearness of the two vowels prevents the unconsciously imputed quantitative interference from making itself felt in the symbolic response.

These and many other similar results need interpretation. One's first temptation is to look about for some peculiarity of English speech, some distribution of sounds in actual words, that would make the results we have secured intelligible. A simple associational explanation, however, is not likely to prove tenable. The weighting of the responses is altogether too much in accordance with an absolute phonetic

[3] For the significance in language of 'sound patterns' or 'phonetic configurations' as distinct from sounds as such, see E. Sapir, Sound patterns in language, *Language*, 1925, 1, 37–51.

scale to make it possible in the long run to avoid at least some use of 'natural' or 'expressive,' as contrasted with socially fixed verbal, symbolism as an explanation. It is difficult to resist the conclusion that in some way a significant proportion of normal people feel that, other things being equal, a word with the vowel *a* is likely to symbolize something larger than a similar word with the vowel *i*, or *e*, or *ɛ*, or *ā*. To put it roughly, certain vowels and certain consonants 'sound bigger' than others. It would be an important check to amass a large number of randomly distributed meaningful words, to classify into the two groups of 'large' and 'small' those which could be so classified without serious difficulty, and to see if in sets in which equal numbers of phonetically contrasted words are found the meaning classes were or were not correlated with the sound classes and to see further, if they are so correlated, if the distributions are of the same nature as those studied in the experiments.

The reason for this unconscious symbolism, the factor of linguistic interference being set aside for the present, may be acoustic or kinesthetic or a combination of both. It is possible that the inherent 'volume' of certain vowels is greater than that of others and that this factor alone is sufficient to explain the results of the experiment. On the other hand, it should be noted that one may unconsciously feel that the tongue position for one vowel is symbolically 'large' as contrasted with the tongue position for another. In the case of *i* the tongue is high up toward the roof of the mouth and articulates pretty well forward. In other words, the vibrating column of air is passing through a narrow resonance chamber. In the case of *a* the tongue is very considerably lowered in comparison, and also retracted. In other words, the vibrating column of air is now passing through a much wider resonance chamber. This kinesthetic explanation is just as simple as the acoustic one and really means no more than that a spatially extended gesture is symbolic of a larger reference than a spatially restricted gesture. In discussing some of the results with the children themselves, who seemed very much interested in the rationale

of the experiment, the impression was gained that the subjects differed somewhat in the psychological basis of the symbolism, some being apparently swayed entirely by the acoustic factor, others by the acoustic factor only or mainly insofar as it was itself supported by the kinesthetic factor.

The tabulated results, of which we have given a brief sample, have the disadvantage of drowning out significant individual variations. For a preliminary report such a method of presentation is at least suggestive; but it would be important to know to what extent individuals differ significantly in their ability to feel symbolism in sound contrasts. The schedules need to be gone over from the point of view of working out individual indices of 'symbolic sensitiveness' to sounds.

Meanwhile a third experiment, intended to bring out individual idiosyncrasies, was carried out with a number of selected subjects, chiefly adults. The results were interesting.

In this experiment an artificial 'word' was taken as a starting point and assigned an arbitrary meaning by either the investigator or the subject. The subject was asked to hold on to this arbitrary meaning and to try to establish as firm an association as possible between the imaginary word and its given meaning. Some phonetic element in the word, a vowel or a consonant, was then changed and the subject asked to say what difference of meaning seemed naturally to result. The answer was to be spontaneous, unintellectualized. The process was kept on for as long a period as seemed worth while, the saturation point of meaningful and interested responses being reached very soon in some cases, very late in others. In the case of certain individuals more than 50 distinct 'words' were found to build up a constellated system in which the meanings were rather obviously the results of certain intuitively felt symbolic relations between the varied sounds. In the case of other individuals actual word associations tended to creep in, but on the whole there was surprisingly little evidence of this factor. The subjects were found to differ a great deal in their ability to hold on without effort to a constellation once formed and to fit new meanings into it consistently with the symbolisms expressed in previous responses. Some would give identically the same response for a stimulus word that had been—so it was claimed—forgotten as such. In its imaginary, constellated context it evoked a consistent response. Others lost their moorings very rapidly. It is hoped to discuss these interesting variations of sensitivity to sound symbolism, *i.e.* to the potential meaningfulness of relations in sound sets, in the final report of these investigations.

In the present purely preliminary report we can do little more than give a few examples of the responses of two of the subjects, KP and JS. The word *mīla* was arbitrarily defined as 'brook' by the subject KP. Fifty-three responses were obtained from her, starting with this nucleus. The following excerpts from the material will be illuminating.

1. *mila*: "Brook."
2. *mila*: "Smaller brook."

3. *mēla*: "Larger brook; nearer a river; swifter; no longer thought of as part of the meadow landscape."
4. *mēla*: "Larger, not so flowing; large lake like Lake Superior."
5. *mela*: "Little lake for fishing."
6. *mela*: "Smaller brook than *mila*, larger than *mila*."
7. *māla*: "Larger than brook. Perhaps water running through a ravine; mixed up with the scene."
8. *mīna*: "Water trickling down in a ravine through the rocks scattered on the side."
9. *mēna*: "A little larger but still diminutive. Water travels through a gravel pit."
10. *mēna*: "Deep, narrow, swiftly moving stream rushing through a cut in the rocks."

. . . . . .

14. *mīni*: "Tiny but swift stream spurting out of the rocks like a jet of water."

. . . . . .

18. *mūla*: "Fairly large, rather rambling brook at night."
19. *mōla*: "Ocean at night."
20. *mōla*: "Ocean in the daytime."
21. *māla*: "Bright ocean."

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2^1. *mila*: (21st response after 2): "A little brook." (The jump back to the earlier response was made at once, without hesitation.)

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14^1. *mīni*: (15th response after 14): "Spurt of water from the rocks, small but swift."

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48. *wila*: "Can be wet, but water is more like dew on wet grass after rain. Belongs to the same set."
49. *wēla*: "Wet trees after a rain. No feeling of a body of water. General dampness, a 'larger' feeling than *wila*."

Not all subjects by any means were as responsive as KP; but a surprising number showed a very definite tendency toward the constellating of sound symbolisms. A few responses from JS, based on the same stimulus word, will be interesting for purposes of comparison. The meaning 'brook' was assigned by the investigator and accepted as satisfactory by the subject.

1. *mīla*: "Brook."
2. *mēla*: "Seems to sort of broaden out. Brook got much calmer."
3. *mila*: "Got to chattering again; smaller brook; stones visible, which make the noise."

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4. *māla*: "Brook gets stagnant with rushes growing in it. The rushes hold the water back so it forms pools. The flow is in the middle; relatively stagnant at the edges."
5. *māla*: "Almost like a lake. An uninteresting lake."
6. *māla*: "More color in it. May have been shallow before; now has greater depth of color, greener shadows; still a lake."
7. *mela*: "Pools taken out at the side from 4. Regains a little of its chattering. Sort of tiny. Less cheerful and chirpy than 3. No great difference as to size between 7 and 3. Merely has a deeper note."

. . . . . .

6'. *māla* (4th response after 6): "Nice broad pool with all nice colors in it. Shadows and water rich green, as of tree shadow in pool."

. . . . . .

1'. *mila* (11th response after 1): "Rather nice chattering brook."

. . . . . .

17. *mila*: "A little splash of water. Tiny stream hit a rock and spattered out in all directions."
18. *mili*: "Water has gone. A bit of rather dense woods with lots of moisture. Water not evident, but obviously somewhere. You don't see water but you know it is there. Rather soggy to walk around."

. . . . . .

6'. *māla* (23d response after 6', with much material in between that was definitely removed from suggestions of 6): "Quick sweep of water view over a lake. Not just a pond. A few islands, but they look like dots. The sun is setting. There are nice black shadows this side of the island. The scenery is darkest where I am. I am interested in the distant brightness."

A comparison of these excerpts from the two schedules shows certain interesting resemblances and differences. Both subjects constellate their responses; but KP does so more rigidly, 'geometrically,' as it were. With JS the underlying 'geometry' of response is enriched by imaginative overtones. Incidentally, it will be observed by the attentive reader, a considerable number of the responses here quoted from the third series of experiments check some of the magnitude symbolisms independently obtained from the first and second. This is true of most of the schedules in this set and is significant because neither magnitude variations nor any other class of variations in the responses had been suggested.

It is believed that studies of this type are of value in showing the tendency of symbolisms to constellate in accord-

ance with an unconscious or intuitive logic which is not necessarily based on experience with the stimuli in their normal, functional aspect. In the realm of articulate sounds, to take a specific type of perceptive field, it is believed that the experiments here referred to give cumulative evidence for the belief that unsocialized symbolisms tend to work themselves out rather definitely, and that the influence of specific, functional language factors need not be invoked to explain these symbolisms.

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Editorial Note

Journal of Experimental Psychology 12 (1929), 225–239. [Reprinted in: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 61–72]

Section Four

The Problem of an International Auxiliary Language (1925–1933)

Introduction:
The Problem of an International Auxiliary Language

The texts in this section cover a relatively short period (1925–1933) in Sapir's scholarly career, during which he published on the problem of the choice and the construction of an international auxiliary language. In 1925 Sapir met Mrs Alice Morris, the driving force behind the International Auxiliary Language Association (IALA). Morris was interested in convincing leading linguists — and she was indeed successful in obtaining the commitment of Otto Jespersen[1] and Edward Sapir— to support the movement and to contribute to the conceptual foundations of the project. Sapir's extensive background in general linguistics and language typology made him the ideal person for exploring the possibility of a universally valid, minimal grammar,[2] which would also be psychologically well grounded. Sapir's work on grammatical processes and on grammatical concepts,[3] as well as his growing interest in Chinese,[4] were to be major assets in the undertaking.

It seems that Sapir lost no time in writing a "Memorandum on the Problem of an International Auxiliary Language": in a letter of March 26, 1925 Alice Morris approved the substance of a first draft, and recommended Sapir to get signatures from other linguists. Eventually the paper appeared with the signatures of Sapir, Bloomfield, Boas, Gerig and Krapp. The "Memorandum" appeared in volume XVI of *The Romanic Review*, a journal published by Columbia University Press, and edited by John L. Gerig, who was one of the co-signers. This paper —clearly written by Sapir alone[5]— starts out from the thesis that linguistics has an autonomous status,[6] but that linguists can serve the practical goals of an international language project, especially since the adherents to the international language

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[1] See now *A Linguist's Life. An English translation of Otto Jespersen's autobiography with notes, photos and a bibliography*. Edited by Arne Juul, Hans F. Nielsen and Jørgen Erik Nielsen (Odense, 1995), esp. pp. 220–225–226 concerning Jespersen's involvement with the IALA.

[2] As noted by Regna Darnell, in her book *Edward Sapir. Linguist, Anthropologist, Humanist* (Berkeley, 1990), p. 272, Morris was interested in Sapir's idea of constructing a kind of universal grammar or "world grammar" which would contain the essential formal framework allowing for the expression of every kind of concept. Darnell quotes from the correspondence between Sapir and Morris, from which it appears (a) that Sapir was thinking of adopting categories from very diverse languages and (b) that he felt that the international language should be "simple, natural, flexible, self-creative, and incidentally logical — with a minimum of [illegible] machinery"; cf. the ideas put forward in the "Memorandum".

[3] E. Sapir, *Language* (New York, 1921), pp. 59–85 and 86–126.

[4] See "The History and Varieties of Human Speech" (1911) [reprinted in section II], pp. 52, 57, 62, 64–65, 87; *Language*, *o.c.*, pp. 66, 70, 73, 80, 83–84, 96–97, 101, 118–119, 134–136, 139, 154, 155, 205, 243–245, 250; and Sapir's two publications with Hsü Tsan Hwa in *Journal of American Folklore* 36 (1923), 23–30 ("Two Chinese Indic Tales") and 31–35 ("Humor of the Chinese Folk") [reprinted in *The Collected Works of Edward Sapir*, vol. IV, pp. 799–809].

[5] See the intratextual references to "the writer" (p. 244, p. 245).

[6] See also the papers "The Grammarian and his Language" (1934) and "The Status of Linguistics as a Science" (1929) [reprinted here in section III].

movement are not sufficiently acquainted with linguistic diversity. The paper testifies to Sapir's intimate knowledge of American Indian languages (including the Chinook jargon, a trade language[7]), and his familiarity with the structure of Chinese.[8] The paper also reflects Sapir's attachment to concepts[9] and techniques used in his *Language* (1921): the notion of grammatical concepts (p. 247),[10] the distinction between factual concepts and relational concepts (p. 250),[11] and the notation used for derivational concepts (p. 248).[12]

The general principles put forward in the "Memorandum" are that the (desired) international language should be characterized by simplicity, economy of categories, and flexibility. More concretely, the first part[13] "General principles" specifies that the international auxiliary language should have an "accessible" phonetic and grammatical structure, psychological (conceptual) simplicity, and should be easily convertible into the world's major languages (English, French, German, Japanese, Chinese are mentioned, p. 255), as well as be made suited for secondary transpositions such as writing and radio transmission. In the second part of the paper, some applications of the general principles are outlined: avoidance of suprasegmental complexities, such as tones and length, absence of inflection, and construction of a unified vocabulary (p. 252, with the suggestion to base the vocabulary on Peano's *Latino sine flexione*).[14] Conversion to major extant languages will be achieved if the international language is maximally ana-

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[7] Chinook jargon (Chinook Pidgin or Chinook Wawa) is a trade language used in the Northwest of the United States and in British Columbia; it is based on a simplification of the phonological and grammatical structure of Chinook; see Allan R. Taylor, "Indian lingua francas", in Charles A. Ferguson – Shirley Brice Heath (eds.), *Language in the USA* (Cambridge/New York, 1981), pp. 175–199, and Sarah Grey Thomason – Terrence Kaufman, *Language Contact, Creolization, and Genetic Linguistics* (Berkeley, 1988), pp. 256–263.

[8] See "Memorandum on the Problem of an International Auxiliary Language", pp. 244, 248, 249 ("We are likely to find that it is helped, rather than hindered, by the unassuming simplicity of such languages as Chinese. Much of our seeming subtlety in expression is really verbiage"; cf. *Language, o.c.*, p. 102: "An intelligent and sensitive Chinaman, accustomed as he is to cut to the very bone of linguistic form, might well say of the Latin sentence, 'How pedantically imaginative !' "), and p. 250.

[9] Note also the expression "grooves of thought" (p. 249), which Sapir used in his *Language* (New York, 1921), p. 232 (and compare also p. 14 there).

[10] See *Language, o.c.*, pp. 86–94, 104–105, 109–113.

[11] See *Language, o.c.*, pp. 86–87, 89–93, 98–102, 106–107 (instead of "factual concepts," Sapir uses there the term "concrete concepts"; "relational concepts" are subdivided into "concrete relational" and "pure relational concepts").

[12] See *Language, o.c.*, pp. 87–88, 92, 106, 109–111.

[13] The text is divided into four parts: "General Principles", "Certain Applications of the General Principles", "Suggestions for Research", "Affiliation with Scientific Bodies".

[14] See p. 252: "In a wider historical sense too Latino sine Flexione has a great advantage. It is worth remembering that Latin has a practically unbroken history as the international language of West European civilization. Of late centuries this tradition has become rather threadbare but it has never died out completely. The various proposals submitted in this memorandum are perhaps best synthetized by taking Peano's Latino as a basis and simplifying it still further in the direction of a thoroughly analytic language, minimizing, so far as possible, the use of derivational suffixes." The Italian scholar Giuseppe Peano [1858–1932], professor of mathematics at the University of Turin, had constructed the "interlanguage" *Latino sine flexione*, which was based on Latin(ate), and, to a lesser extent, Germanic and Slavic lexical bases.

lytical, and minimally derivational (to avoid derivation Sapir suggests two strategies: compound lexification and lexical concretization).

Sapir's major concern in the "Memorandum" is with the psychological acceptability of the international language that has to be constructed.[15] he therefore deems it necessary to prepare the project through acoustic-articulatory research and psycholinguistic research, which would anticipate possible psychological resistance and rejection.

The "Memorandum" paper appeared in 1925, but does not seem to have aroused widespread international interest. It seems that the ideas put forward in the paper could not convince scholars of the (urgent) need of an international language; most probably, the principles outlined were felt to be generally sound, but extremely abstract. Also, one should not forget that the movement for an international auxiliary language had by then a rather long tradition[16] — in 1911 the Belgian scholar Jules Meysmans had coined the term "interlinguistics" as a designation for this field of applied research[17] —, and that most of the ideas put forward in the "Memorandum" had already been expressed by major European linguists, such as Hugo Schuchardt[18] and Jan Baudouin de Courtenay.[19]

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[15] In his *Language*, *o.c.*, pp. 207–210, Sapir had already pointed out the importance of psychological resistance to borrowing (of words) from other languages; such psychological resistance would *a fortiori* apply in the case of the adoption of a new language.

[16] In 1939 Nikolaj S. Trubetzkoy devoted a by now classic article to the problem of constructing a phonologically acceptable international language: "Wie soll das Lautsystem einer künstlichen internationalen Hilfssprache beschaffen sein ?", *Travaux du Cercle linguistique de Prague* 2 (1939), 5–21.

[17] In 1860 August-Theodor von Grimm wrote a foundation-laying "Programm zur Bildung einer allgemeinen Sprache", published in *Die Weltsprache* (Bamberg, 1887), pp. 8–15. In 1863 Giusto Bellavitis followed up with his book *Pensieri sopra una lingua universale e su alcuni argomenti analoghi* (Venice, 1863). Between 1880 and 1890 numerous books and articles appeared on theoretical and practical aspects of the problem of an international language, and various auxiliary languages were developed (some of which became very successful, such as Volapük and Esperanto). In 1889 the first catalogue of "interlinguistic" literature was published (*Katalog über die Sonderstellung der weltsprachlichen Literatur in den Räumen des Buchgewerbemuseums*, Leipzig, 1889). The best surveys on the early period of the international language movement are Louis Couturat – Léopold Leau, *Histoire de la langue universelle* (Paris, 1903, second ed. 1907) [reprinted Hildesheim-New York, 1979] and Werner Fraustädter, *Die internationale Hilfssprache. Eine kurze Geschichte der Weltsprach-Bestrebungen* (Husum, 1910); for later developments see Albert L. Guerard, *A Short History of the International Language Movement* (London, 1922), Henry Jacob, *A Planned Auxiliary Language* (London, 1947), R. Bettex, *Historia del lingua international* (Morges, 1972, 2 vols.), Alessandro Bausani, *Le lingue inventate. Linguaggi artificiali, Linguaggi segreti, Linguaggi universali* (Rome, 1974) and the useful anthology of texts edited by Rudolf Haupenthal, *Plansprachen* (Darmstadt, 1976), which contains the German translation (pp. 123–147) of the "Memorandum."

[18] See Jules Meysmans, "Une science nouvelle", *Lingua internationale* 1 (1911–12), 14–16. On present-day perspectives of interlinguistics, see the various contributions in Klaus Schubert – Dan Maxwell (eds.), *Interlinguistics. Aspects of the Science of Planned Languages* (Berlin/New York, 1989).

[19] See especially the following publications by Hugo Schuchardt: *Weltsprache und Wissenschaft. An Caesar Meyer* (Strassburg, 1894); "Die Wahl einer Gemeinsprache", *Beilage zur Allgemeinen Zeitung* 230 (1900), 1–3; "Bericht über die auf Schaffung einer künstlichen internationalen Hilfssprache gerichtete Bewegung", *Almanach der Akademie der Wissenschaften in Wien* (1904), 281–296; "Zur Frage der künstlichen Gemeinsprache", *Beilage zur Allgemeinen Zeitung* 107 (1907), 259–261. On Schuchardt's role in the movement for an international auxiliary language, and on his extensive correspondence with interlinguists, see the following articles by Pierre Swiggers and Herman Seldeslachts: "Une lettre de Lev Ščerba à Hugo Schuchardt à propos de la création d'une langue auxiliaire internationale", *Orbis* 38 (1995), 215–223; "Zu Schuchardts Rolle in der interlinguistischen Bewegung. Das Zeugnis Heinrich von Mansykas", *Orbis* 36 (1993), 229–236; "Une lettre

In the early 1930s there was a upsurge of interest in the question of an international auxiliary language, as can be seen from the rapid succession of major publications by O. Jespersen,[21] D. Szilágyi,[22] and W.E. Collinson.[23] Perhaps the best testimony is the fact that the question was put on the program of the second international conference of linguists, held in Geneva, in August 1931. For the section devoted to the construction of an international language, Sapir sent in a paper —in fact a condensed version of a longer manuscript[24]—, which was published in 1933, in the proceedings of the conference.[25] In "The Case for [a] Constructed International Language,"[26] Sapir adopts a more propagandistic view than in the 1925 "Memorandum." This explains the emphasis laid on the practical and intellectual (broadly humanistic and cognitive) advantages of an international language, the strong rebuttal of three criticisms generally formulated against

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re de Paul Chappellier à Hugo Schuchardt à propos de la création d'une langue auxiliaire internationale", *Orbis* 39 (1996–97), 163–166; "Philosophe et linguiste devant le choix d'une langue internationale: Albert Schinz et Hugo Schuchardt", *Orbis* 38 (1996–97), 167–173; "Die Kontakte zwischen Josef Weisbart und Hugo Schuchardt hinsichtlich der Plansprachenproblematik", *Orbis* 39 (1996–97), 175–179; "Zu Couturats und Schuchardts Beschäftigung mit der Frage einer internationalen Hilfssprache", *Orbis* 40 (1998), 179–184; "Die Auseinandersetzung zwischen Albert Ludwig und Hugo Schuchardt hinsichtlich der Schaffung einer künstlichen internationalen Hilfssprache", *Orbis* 40 (1998), 185–190; "Schuchardts Beschäftigung mit dem Volapük: ein Zeugnis aus dem Briefwechsel", *Orbis* 40 (1998), 191–195. Schuchardt, in his writings on an international auxiliary language, criticizes some misconceptions concerning the function of an international language and refutes the organicist reactions to it (viz. the criticism of the artificial and non-natural character of an international auxiliary language).

[20] See especially Jan Baudouin de Courtenay, "Zur Kritik der künstlichen Weltsprachen", *Annalen der Naturphilosophie* 6 (1907), 385–433; this text is a masterful reply to the brochure published by the Neogrammarians Karl Brugmann and August Leskien, *Zur Kritik der künstlichen Weltsprachen* (Strassburg, 1907).

[21] Otto Jespersen, "A New Science: Interlinguistics", *Psyche* 11 (1930–31), 57–67, reprinted (under the title "Interlinguistics") in Herbert N. Shenton – Edward Sapir – Otto Jespersen, *International Communication. A symposium on the language problem* (London, 1931), 95–120 [see also note 29]. Two years earlier Jespersen had published his booklet *An International Language* (New York, 1928).

[22] Dénes Szilágyi, "Versus interlinguistica", *Schola et Vita* 6 (1931), 97–120.

[23] William Edward Collinson, "International Languages", *The Year's Work in Modern Language Studies* 2 (1932), XI-XVIII. William Edward Collinson [1889–1969], professor of Germanic philology at the University of Liverpool, published extensively on the problem of an international language; see, e.g., his books *Esperanto and Its Critics* (Edinburgh, 1924) and *La homa lingvo* (Berlin, 1927) and his articles "Discussion: The case for Esperanto", *Modern Languages* 13 (1931–32), 109–112 and "The Structure of Esperanto compared with that of Some National Languages", *Transactions of the Philological Society* (1931–32), 77–79. He also participated with Sapir in the IALA-sponsored research on semantic categories, publishing a work (with Alice V. Morris) on *Indication* (Baltimore, 1937), and commenting on Sapir's work on "Totality" and "Grading" [see section V].

[24] An 8-page typescript, of which a carbon copy is in Philip Sapir's archives, contains a somewhat more extensive text than the one published in the *Actes*. The typescript bears the title "The Case for a constructed international language," and a handwritten subtitle "Résumé". Within the text there are handwritten deletions, corrections (mainly of typographical errors) and a restricted number of changes and additions, all in Edward Sapir's hand. Of another typescript version (of 3 1/4 page) a carbon copy also survives; this version was sent to Alice V. Morris. Sapir sent a corrected version of the "Résumé" text to Albert Sechehaye, the secretary of the second international conference of linguists.

[25] *Actes du Deuxième Congrès international de linguistes, Genève 25 – 29 août 1931* (Paris, 1933).

[26] Apparently the proofs of the published contribution were not (re)read by Sapir: the typescript versions have the indefinite article in their title ("The Case for a ...") and have the correct form "particularly" towards the end of the text (here "particulary"). Also, the printed 1933 text ends with a comma, a clear misprint for a period.

international language(s), and the strong rejection of an "organicist" view on language.[27] This 1931 "résumé" offers few concrete proposals, since Sapir limits his considerations to the necessity of the construction of a "highly efficient and maximally simple international language," based on a calibrated "stock of words" and "grammatical techniques."[28] From this short paper we can retain, however, the definition of the international language project as an attempt to ensure transnational communication on spheres of interest which have universal significance; its goal is to elaborate a consciously regularized and adaptable system (in contrast with the unconscious nature, the "local" integration and the more personally and societally bound domains of a "mother tongue").

In 1931 Sapir published two other papers on the question of an international auxiliary language. The paper published in *Psyche*[29] under the title "The Function of an International Auxiliary Language" was written for a scholarly audience,[30] and testifies to the increasing need for, as well as to the growing scientific interest in an international auxiliary language (p. 110 and p. 121). Sapir points out two main directions, viz. the use of a constructed language, or the adoption of (a simplified form of) an established language, and suggests that the "modern world" may need a full-fledged constructed international language. What Sapir does in this paper, is the following:

(1) First, he discusses the general requirements which an international auxiliary language must satisfy: it should be analytic, simple, regular, but also creative, refined, and adapted to the modern mind: "What is needed above all is a language that is as simple, as regular, as logical, as rich, and as creative as possible; a language which starts with a minimum of demands on the learning capacity of the normal individual and can do the maximum amount of work; which is to serve as a sort of logical touchstone to all national languages and as the standard medium of translation. It must, ideally, be as superior to any accepted language as the mathematical method of expressing quantities and relations between quantities is to the more lumbering methods of expressing these quantities and relations in verbal form. This is undoubtedly an ideal which can never be reached, but ideals are not meant to be reached: they merely indicate the direction of movement" (p. 113);

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[27] For a similar criticism of the organicist view, see Hugo Schuchardt, "Bericht über die auf Schaffung einer künstlichen internationalen Hilfssprache gerichtete Bewegung", *a.c.* [see note 19].

[28] Here the term is used as a synonym for grammatical "processes" in general; in *Language* (New York, 1921) Sapir used the term *technique* to refer to the grammatical processes relating to the ways of combining (or of not combining) a concrete concept with a relational concept (this includes the range from isolation (= agglutination) and fusion, with possible "symbolic" expression).

[29] The papers published by Herbert N. Shenton in *Psyche* 11:1 (1930–31) 6–20, by Otto Jespersen in *Psyche* 11:2 (1930–31), 57–67 and by Edward Sapir in *Psyche* 11:4 (1930–31), 3–15 were also jointly published (in book form) (see the reference in note 21). Sapir's paper is reprinted here after the version published in the *Selected Writings* (1949).

[30] In this paper (as well as in its shortened version "Wanted: a World Language") Sapir uses the term "interlinguist(s)."

(2) To counteract negative reactions (based on nationalism and intellectual or affective myopia) to the international language movement, he then proceeds to an exercise in demystification, showing the illusions and the false ideas one has can have about one's native language and pointing out that behind the apparent simplicity, there often lies great complexity.[31] Sapir's discussion of asymmetries in English[32] and in French[33] foreshadows B.L. Whorf's work on "overt" and "covert" [34] categories (incidentally, Sapir uses the terms "overt form," "overt simplicity" and "to cover up");
(3) Finally, Sapir refutes the label of "inferiority" which is erroneously attached to constructed languages, and he shows the logical and psychological advantages of a constructed language, and insists on the (intellectual and linguistic) freedom allowed by it. The paper ends with a strong plea for an open and liberal humanistic education.

The paper "Wanted: a World Language,"[35] published the same year in *The American Mercury*, is aimed at a large audience; it is based[36] on the longer paper published in *Psyche*, from which various passages are reproduced (including the more technical discussion of English formal categories).

Pierre SWIGGERS

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[31] Sapir speaks of "a perfect hornet's nest of bizarre and arbitrary usages."

[32] Sapir discusses two cases: noun-derivation (zero-derivation, derivation with *-ing*, with *-th*, or with a Latinate formation, such as *obedience*) and verb phrases with *put* or *get*.

[33] For French Sapir takes the case of the multiple values of the reflexive voice.

[34] See Benjamin Lee Whorf, *Language, Thought, and Reality. Selected Writings of Benjamin Lee Whorf*. Edited and with an introduction by John B. Carroll (Cambridge [Mass.], 1956), esp. pp. 69–70, 88–89, 113, 132. On Whorf's views on language and the categorization of experience, see Penny Lee, *The Whorf Theory Complex: a Critical Reconstruction* (Amsterdam/Philadelphia, 1996).

[35] The title was reused in 1969 by Mario Pei for his brochure *Wanted: a World Language* (New York, 1969).

[36] Apart from a rather different paragraphing and the deletion of a few repetitive sentences, the version published in *The American Mercury* differs from the one published in *Psyche* (and its 1931 and 1949 reprints) by having five longer passages deleted from it: the second paragraph on the purpose of the paper "The Function of an International Auxiliary Language," part of the more "technical" paragraph on temporal expressions, part of the paragraph on symbolic systems (such as used in mathematics and symbolic logic), the passage on the "Chinaman's and the Indian's indifference to the vested interests of Europe," and part of the last but one paragraph, where Sapir warns us against the danger of international language doctrinarism.

MEMORANDUM ON THE PROBLEM OF AN INTERNATIONAL AUXILIARY LANGUAGE

THE following memorandum is offered from the point of view of one who is greatly interested in linguistic study on its own account. Like many, perhaps most, linguistic students he has until recently been only moderately interested, if at all, in the various proposals that have been made from time to time to create an International Language that might be used alongside the many national languages already in use. Within the last year or two, however, the increasingly practical nature of the problem has been borne in upon him as well as the reasonable possibility of its solution. It has seemed to him, however, that a wider acquaintance with linguistic phenomena than most of those who are interested in the International Language movements presumably possess would have enabled them to evolve far simpler and more readily acquired auxiliary languages than those which have actually been proposed. The writer is particularly impressed by the needless adherence to the irrelevances and elegances of our western European languages and he wonders why a language like Chinese, which has produced a poetic and philosophic literature of the greatest subtlety, can do without cases, modes, tenses, and a complex system of derivations when an international language like Esperanto, which is supposed to be a carefully thought out and ideally simple means of communication, indulges in all kinds of linguistic luxuries. In the following remarks the attempt has been made to cut to the bone of what is necessary in practical communication that does not aim to ape the literary graces of English or French. The needs of aliens who have not grown up in our Occidental civilization are particularly borne in mind. It seems not unreasonable to proceed on the assumption that it is worth while to consider these needs and to try to learn something from the structure of languages simpler than Italian or Spanish or any of their International derivatives.

But the writer feels strongly that ruthless simplicity is not the only thing to consider. A great deal of useful energy has already been expended on International Language work and this energy and its results must be utilized. Moreover, the movement is mainly in the hands of the Occidental world, and it is very possible that a maximum of theoretical simplicity would present certain unforeseen psychological difficulties. The writer is very far indeed from wishing to put forward radically new proposals. They would be utterly futile. Yet he hopes that some of the points raised in this memorandum may assist in simplifying the International Language problem, whatever basis (Esperanto, Ido, Latino sine Flexione, or other) be ultimately adopted, and make clear the need for experimental research before responsible bodies commit themselves to any one form of International Language.

The memorandum is divided into four parts: *A*, General Principles; *B*, Certain Applications of the General Principles; *C*, Suggestions for Research; *D*, Affiliation with Scientific Bodies.

A. General Principles

An International Auxiliary Language should have the following characteristics:

1. It should have no sounds (vowels and consonants) that cause serious difficulty to large bodies of speakers.

2. It should have the simplest grammatical structure that is consonant with effectiveness. It should not merely have a structure that is theoretically simple, logical, and regular, but that is most easily assimilated, on psychological grounds, by the greatest number of diverse peoples.

3. It should be so constructed as to be readily convertible into any of the major languages now in use. And, conversely, it should be able to render the essential meaning, without danger of ambiguity, of a text composed in any of these languages.

4. It should have considerable flexibility of structure, so that any speaker may not too greatly impair its intelligibility if he bends it involuntarily to constructions familiar to him in his own language. There should be some opportunity for alter-

nation of expression, such as the option of using or not using elements indicating certain concepts, like number or tense.

5. It should be built as far as possible out of materials that are familiar to the speakers of West European languages.

Of lesser importance, yet worthy of consideration, are the following principles:

6. The International Language should, so far as possible, be a logical development of international linguistic habits that have been formed in the past.

7. It should be capable of expression in shorthand with the utmost ease.

8. Its phonetic system should be such as to make it intelligible with a minimum of ambiguity on the telephone, phonograph, and by radio.

B. Certain Applications of the General Principles

The numeration corresponds to *A*.

1. (*a*) There are certain consonants which should be avoided because found in relatively few languages, such as *th* of English *thin* and *th* of English *then*, *ch* of German *Bach* and *ch* of German *ich*. But this is not all. There are certain consonants which, while not exactly uncommon, are not generally found or are often not found if certain other consonants that resemble them are in existence in the language. Thus, neither *w* nor *v* of English *wine* and *vine* is an uncommon sound, but there are many languages which do not possess both. Hence to recognize both *w* and *v* is to invite confusion in such languages. Either *w* or *v* should be explicitly recognized and the other considered an alternative pronunciation. Thus, if *w* is adopted, Poles and Italians may legitimately pronounce it *v*; if *v* is adopted, Chinese and Arabic speakers may legitimately pronounce it *w*. Had this principle been adopted in Esperanto, we should not have both *s* and *ŝ*, nor both *c* and *ĉ*; *s* and *ŝ*, for instance, would have been considered as merely variant pronunciations of one sibilant consonant. In fact, the whole group of sibilants—*s*, *ŝ*, *c*, *ĉ*—might with advantage have been reduced to one, *s*. There is no doubt that a careful survey of the whole phonetic field would suggest a simplified consonant system that would make

the learning of Esperanto, Ido, or other International Language very much easier.

(*b*) Consonant combinations should be avoided as far as possible, but this principle would probably need to be checked considerably by other considerations. By simplifying too much, we might in many cases lose the very real advantages of immediate recognition of words and of historical continuity.

(*c*) The vocalic system should be cut down to a minimum. The series *a*, *e*, *i*, *o*, *u* is plenty; *a*, *i*, *u* alone would have very distinct ethnic and acoustic advantages, but would probably so distort the appearance of words as to introduce new difficulties. No prosodic peculiarities, such as differences between long and short vowels, differences of stress accent, or differences of tone, should be recognized, as the habits of different languages are too various and inflexible on such points as these.

2. (*a*) There seems to be no need to insist on the specific expression of certain grammatical concepts that most of us are accustomed to. The usefulness of tense distinctions is greatly overestimated, for instance. Even in English there is no grammatical difference between present and future in cases like "I'm working" and "I'm working tomorrow." Word particles can always be appended if it is necessary to convey the idea of tense. Such complexities as the three Esperanto tenses with their symbolic vowels and attached participles are quite uncalled for, add nothing to clarity of thought, make for pedantry in expression, and greatly increase the difficulty of learning the language. In general, neat symbolisms of expression are more attractive on paper than they are either necessary or desirable in practice. What applies to tense applies also to gender, case, mode, probably number, and several other categories. "Yesterday he kill several cow" is quite as adequate as "yesterday he killed several cows." Certain rules of order of words, implication as to concepts not definitely expressed, and optional use of "empty" words to define case relation, tense, and other grammatical ideas, could be very easily worked out and would prove astonishingly effective. There are many cases where "ambiguity" is a real advantage. "He kill man" might be looked upon as a blanket statement for "he kills a (the) man," "he

kills (the) men," "he killed . . . ," and so on, precisely as in Chinese. In real usage it is most instructive to see how little ambiguity such bare and simple propositions contain, because there is always a context. Moreover, we are often driven to greater definiteness of expression than we are actually aiming at; we are the dupes of our forms. For instance, in a legal clause like "Any person or persons who has or have knowledge of, or who has or have had knowledge of, such act or acts" there is obviously a labored attempt to express the generalized "Person who know (about) such act." Where number and tense *have* to be particularized, one can always add qualifying elements, thus, "One person who know such act," "Several person who did know such several act," and so on. (Of course "one," "several," and "did" are here used merely as approximate English counters for whatever appropriate terms may actually be adopted.) In short, the ideal of effective simplicity is attained by a completely analytic language, one in which the whole machinery of formal grammar is reduced to carefully defined word order and to the optional use of "empty" independent words (like "several," "did," "of"). Inflection is reduced to zero. This is the ideal that English has been slowly evolving towards for centuries and that Chinese attained many centuries ago after passing through a more synthetic prehistoric phase. (The simplicity of Chinese grammar is not a primitive trait, but is at the polar extreme from "primitiveness.")

(*b*) In the expression of derivative ideas (place, instrument, adjectival, and many others) there is room for great simplification. The international languages that have been suggested seem to make it a matter of pride to have a great many deriving affixes and to luxuriate in the endless possibilities of coining new words, whenever wanted, by means of the derivational apparatus. A far better economy of material would seem to demand that derivation be either eliminated or reduced to a minimum. Psychologically, it is quite false to imagine that the memorizing of a series of derivative words of type A + x, B + x, C + x, D + x (*e.g.*, *bak-er*, *farm-er*, *cutt-er*, *press-er*) reduces to the memorizing of the root words A, B, C, D (*e.g.*, *bake*, *farm*, *cut*, *press*) plus the memorizing of a deriving affix x (*e.g.*, *-er*) of given

function (*e.g.*, "one who . . ."). As a matter of fact, such derivative words have to be learned as units, though the memorizing of them is naturally less laborious than of words absolutely unrelated to words already mastered. There seem to be two ways of simplifying the problem of derivative formations. One is to compound independent words, *e.g.*, *bake man* or *bake person* for *baker*, *cold time* for *winter*, *make strong* for *strengthen*, *more old* for *older*. In a sense such compound expressions have to be learned as units too, but there seems to be a very real psychological advantage in having every element in the language independently expressive. The speakers and readers of such a language come to feel that in a comparatively short time they have memorized everything there is to know and that they have a free, creative use of the language after that. The second method is intertwined with the first. It consists in a simplification of the form pattern. A rigorous thinking out of the true content of a sentence as contrasted with its purely formal convolutions often reveals the humiliating fact that it could have been expressed with half the apparatus. Abstract nouns, in particular, are not nearly so useful or necessary as is generally assumed. There should, perhaps, be some provision for their formation, perhaps by means of some indefinite noun like *thing* or *matter* or *way* (*e.g.*, *wise way* for *wisdom*), but the real point is that they can often be easily avoided, and with a gain in vividness. Thus, there is nothing in the sentence "The wisdom of old age chills youth" which is not as adequately expressed, and with a more intuitive impact, in such a sentence as "Wise old person make cold (to) young person" (or "The wise old make cold the young"). In other words, we must not too lightly assume that the grooves of thought which we are accustomed to in our European languages are the easiest or most natural in a universal sense. It may be worth our while to get into the habit of simplifying the pattern of our thought. We are likely to find that it is helped, rather than hindered, by the unassuming simplicity of such languages as Chinese. Much of our seeming subtlety in expression is really verbiage.

(*c*) But experience may show that the average European mentality, as it actually functions today, cannot go quite so far

as is suggested here (*a*, *b*). This would not necessarily prevent one from aiming towards the gradual realization of an analytic ideal of linguistic expression. The main point at present would seem to be to introduce the possibility of far greater flexibility of individual expression. If, for instance, it gradually became apparent that a more Chinese-like use of Esperanto or Ido or Latino or Romanal, whether by Chinese or others, had certain definite advantages, there is no reason why such use might not gradually grow in favor at the expense of the uses already standardized. It seems a mistake to legislate too rigidly at the present time on points of grammar. Attention should be concentrated rather on the formation of a universally accepted *minimum* vocabulary, sufficient for ordinary purposes.

3. If a language is too synthetic, translation from it or into it is necessarily more difficult than if it is analytic in structure. If two languages, one of which is to be translated into the other, are very different in structure, each must be analyzed, consciously or unconsciously, into the concepts, both factual and relational, which are expressed in it, so that the equivalences of the two languages may be discovered or constructed. In dealing with a thoroughly analytic language this task of mutual accommodation is appreciably lightened because the conceptual analysis has been made by at least one of the two languages itself. The more analytic a language is, the more easily does it serve as a circulating medium for all others. It should be carefully borne in mind that tests of the efficiency of Esperanto, for instance, as an expressive equivalent of French or Spanish or Italian or German do not really prove the adequacy of Esperanto as a universal "circulating medium" for the simple reason that Esperanto is modeled on these very languages. A Frenchman or a Spaniard is heavily biased in its favor, in advance of any knowledge he may have of it, where a Chinaman or Japanese or other non-European is not nearly so greatly impressed by its simplicity or its ready equivalence to his own language. Universal adequacy does not mean a readiness to provide word for word translations of other languages, but simply ease in reflecting their essential meaning.

4. The importance of grammatical flexibility or choice has

been shown in 2. We cannot hope to reduce the linguistic psychology of all speakers to one level. Hence we need a language of structural "lowest terms." Many people may feel that a certain poverty results, but this poverty, if such it really be, is likely to make for an increase of true mutual understanding. It is remarkable what excellent work can be accomplished by so unpretentious a *lingua franca* as the Chinook Jargon, which has been, and to a large extent still is, used between the whites and Indians of the Pacific Coast and between various Indian tribes of this region that speak mutually unintelligible languages. This Jargon, which has not a large basic vocabulary and is built on strictly analytic lines, is not merely a trade language but has developed such adroitness with its seemingly slender means that long religious and political harangues can be and are delivered in it. The Indians themselves, who speak perhaps the most complexly synthetic languages that are to be found anywhere, seem to have no notion that the Jargon is an "imperfect" language but consider it a perfectly adequate medium for intertribal communication. A vast part of our vocabulary is dedicated to feeling rather than to meaning and is of no use for scientific, business or other practical work.

5. There is no theoretical reason why an Auxiliary International Language should not be made out of whole cloth, as it were, but the practical advantages of using known material are too obvious to be insisted upon. It is perhaps unfortunate that Esperanto is built out of such historically diverse elements as French, Latin, Greek, English, and German, though the history of the English language is abundant testimony of the practical possibilities of combining words of different origins into new syntheses. There is a certain incongruity that results which affects some people much more unpleasantly than others, and undoubtedly this feature has done a great deal to prevent Esperanto from spreading as rapidly as it might have. The Romanal idea of a historically unified vocabulary is psychologically sounder, because such a vocabulary canalizes easily with systems of word associations that are widely prevalent. Latino sine Flexione too is psychologically sounder than Esperanto or Ido. It has all the advantages of these of being

built out of generally known materials and the important further advantage of not forcing violently new associations. A vast number of people have a fair smattering of the Latin vocabulary but an imperfect memory of the rules of Latin grammar. A language which capitalizes both this knowledge and this ignorance is really in a psychologically impregnable position.

6. In a wider historical sense too Latino sine Flexione has a great advantage. It is worth remembering that Latin has a practically unbroken history as the international language of West European civilization. Of late centuries this tradition has become rather threadbare but it has never died out completely. The various proposals submitted in this memorandum are perhaps best synthetized by taking Peano's Latino as a basis and simplifying it still further in the direction of a thoroughly analytic language, minimizing, so far as possible, the use of derivational suffixes. One of the incidental advantages of Latino sine Flexione is that it can serve as a useful stepping stone towards the learning of Latin itself.

7. The requirements of a shorthand of maximum ease emphasize once more the importance of a very simple scheme of consonants and vowels. It is worth working for a stenographic system that is so simple and transparent, so rapid even without abbreviations, that the International Language can be directly learned, written, and printed in it. This may ultimately prove to be an important economic asset. If the phonetic system of the International Language is simple enough, the labor of learning and using a good shorthand system would be appreciably less than that of learning and using longhand.

8. Experience seems to show that certain sound differences that seem clear enough in ordinary speech tend to be minimized or obscured in mechanical transmission. Examples are the vowels *e* : *i* and *o* : *u* and the consonant pairs *p* : *b*, *t* : *d*, *k* : *g*, *s* : *z*, *f* : *v*. It might be found advantageous to level these pairs of sounds and to consider them as one each. If one had the option of constructing an ideal universal phonetic system, he would probably limit himself to:

(*a*) 3 vowels—*a*, *i*, *u*.
(*b*) 8 consonants—*p*, *t*, *k*, *s*, *l*, *m*, *n*, *v*.

(*c*) All syllables to end in a vowel (perhaps also in *m* or *n*).

Such a system (built out of syllables of type *a*, *i*, *u*: *pa*, *pi*, *pu*: *la*, *li*, *lu*; 9 x 3 or 27 basic syllables) would be absurdly easy to learn to write in shorthand and would provide more than enough basic vocables for even the most elaborate vocabulary. If we limit ourselves to words of one, two, and three syllables, a simple calculation shows that this system gives us the means of forming:

$$\begin{aligned} 9 \times 3 &= 27 \text{ (monosyllabic)} \\ 27 \times 27 &= 729 \text{ (disyllabic)} \\ 27 \times 27 \times 27 &= 19{,}683 \text{ (trisyllabic)} \\ &\underline{\qquad\qquad} \\ &20{,}439 \text{ basic words.} \end{aligned}$$

A language built out of such materials could be acoustically perceived at once without the slightest real danger of ambiguity, could be pronounced accurately at once (allowing for such optional pronunciations as *r* for *l* and *w* for *v*) by every person on the globe, and could be learnt as a shorthand orthography in an hour by any person of normal intelligence. The great disadvantage of so simplified a system is, of course, that it would so distort the Latino, say, or Romanal or Ido words as to impair the historic usefulness of their vocabularies. But Oriental and other exotic habits of speech might gradually suggest or even force a compromise with it.

C. Suggestions for Research

Certain kinds of experimental work may now be suggested. These are intended to substantiate or, possibly, disprove some of the points made in the preceding paragraphs. The numeration corresponds to that of *A* and *B*.

1. Experiments could be undertaken to test the relative ease with which various sounds are heard and sound differences are perceived. As many distinct nationalities as possible should be represented. The test words should be nonsense words, so that the helping or hindering influence of actual word associations may be avoided. Another set of experiments would test the ability of different nationalities to pronounce various sounds. If it is found, for instance, that the acoustic and articulatory distinction between *s* and *z*, or *l* and *r*, causes real embarrassment

to large and important populations, there is good reason to eliminate the distinction in an international language or, if this cannot be done, so to tinker with the vocabulary as to minimize the danger of too many words occurring which differ only in such sound distinctions as cause trouble.

2. Experiments could be undertaken to ascertain with what ease people of various nationalities can learn to understand, in writing and as spoken, a highly simplified recasting of their own language along the analytical lines that we have laid down. How readily, for instance, after the rules for the simplified form of their language have been carefully explained, can Germans get at the meaning of sentences like "er tat gebe zwei Pferd zu ich (*or* mich)" for "er hat mir zwei Pferde gegeben"? Next, with what ease can they learn to compose in such a broken-down form of their language? These two sets of experiments would attempt to discover how readily the average person can learn to think in a completely analytic mould without complicating the problem by the necessity of memorizing a stock of unfamiliar words.

After this, other sets of experiments could be designed to test the ability of various people to learn to understand, in writing and as spoken, and to compose in a constructed analytical language based on Esperanto or Romanal or Latino sine Flexione. Compare with their ability to do the same for Esperanto or Ido or Latino sine Flexione as actually used. Direct comparisons, however, should not be made after too brief a period of experimentation, for a highly analytic language, built on Chinese lines, is likely to be unconsciously resisted on emotional grounds as "ridiculous" or "too childish" for a while. After a short period of resistance, however, the advantages of such a language are likely to sink in at a rapid rate.

3. After the more tentative experiments, chiefly with isolated sentences, recommended in 2, more elaborate tests should be made in translating from and to the suggested analytic language (using native, Esperanto, and Latin material). Then compare with similar translation experiments in actual Esperanto and Latino sine Flexione. Esperantists and accomplished Latin scholars are probably best excluded as subjects from these experiments. It would be worth while getting personal estimates from

individuals of different nationalities as to the relative ease and adequacy of translation in the different groups of cases, also some indication of the emotional attitude (readiness to acceptance, irrational dislike) of those experimented on.

4. Check or control experiments might be valuable. Selected business or scientific texts in, say, English, French, German, Japanese, and Chinese might be translated by those speaking these languages into other accepted languages, into Esperanto (by an Esperantist), into Ido (by an Idist), into Latino sine Flexione, and into some form or forms of thoroughly analytic languages. These translations could then be retranslated both directly and also *via* a third language into their originals or a third language by other individuals and compared with the original texts to see if the essential meaning has not been lost in the processes of translation.

5. It might be worth preparing a questionnaire intended to throw light on the psychological attitude of different people towards the question of an international language with a homogeneous or with a mixed vocabulary.

6. It might be worth making an effort to cooperate with Peano to see if a universally satisfactory form of Latino sine Flexione might not be agreed upon, in which simplification of the language is pushed even further, as many as possible of the derivatives being dispensed with.

7. One or more of the existing shorthand systems might be adapted to various forms of International Auxiliary Language. Speed, ease of writing, and legibility could be tested. In particular, it would be worth while finding out if a shorthand system, when applied to a language of maximum phonetic simplicity, could be made universally legible when applied with no more than average care, instead of merely legible to the writer himself.

8. The telephone and radio people might be asked to test out the possible advantages in transmission of an extremely simple and unambiguous phonetic system as compared with the ones used by Esperanto, Latino sine Flexione, or actually spoken languages. Inasmuch as these experiments would be designed to test the unambiguous transmissibility of sounds and sound combinations as such rather than of languages, it might be

advisable to use nonsense material built out of the respective phonetic systems. If the highly simplified phonetic system suggested in *B* proves to have very decided advantages from the point of view of *C* 7, 8, it becomes a rather more than academic matter whether or not the phonetic system of the International Auxiliary Language be left as at present used in Esperanto or Latino sine Flexione.

D. Affiliation with Scientific Bodies

It would be advantageous to have the auxiliary language movement get into as close touch as possible with the various scientific bodies that are interested in linguistic research, so that eventually they may give the movement active sympathy and collective backing. No doubt many of the members of such Societies are at present uninterested in the problem. But it should be possible to get an important nucleus of membership in each Society interested, which may then draw the attention of the Society as a whole to the importance of the problem and invite general discussion.

Signed by Edward Sapir
Leonard Bloomfield
Franz Boas
John L. Gerig
George Philip Krapp

Editorial Note

The Romanic Review 16 (1925), 244–256. [German translation in Reinhard Haupenthal (Hrsg.), *Plansprachen. Beiträge zur Interlinguistik* Darmstadt: Wissenschaftliche Buchgesellschaft, 1976, pp. 133–147]

THE FUNCTION OF AN INTERNATIONAL AUXILIARY LANGUAGE

As to the theoretical desirability of an international auxiliary language there can be little difference of opinion. As to just what factors in the solution of the problem should be allowed to weigh most heavily there is room for every possible difference of opinion, and so it is not surprising that interlinguists are far from having reached complete agreement as to either method or content. So far as the advocates of a constructed international language are concerned, it is rather to be wondered at how much in common their proposals actually have, both in vocabulary and in general spirit of procedure. The crucial differences of opinion lie not so much between one constructed language and another as between the idea of a constructed language and that of an already well-established national one, whether in its traditional, authorized form or in some simplified form of it. It is not uncommon to hear it said by those who stand somewhat outside the international language question that some such regular system as Esperanto is theoretically desirable but that it is of little use to work for it because English is already *de facto* the international language of modern times—if not altogether at the moment, then in the immediate future—that English is simple enough and regular enough to satisfy all practical requirements, and that the precise form of it as an international language may well be left to historical and psychological factors that one need not worry about in advance. This point of view has a certain pleasing plausibility about it but, like so many things that seem plausible and effortless, it may none the less embody a number of fallacies.

It is the purpose of this paper to try to clarify the fundamental question of what is to be expected of an international auxiliary language, and whether the explicit and tacit requirements can be better satisfied by a constructed language or by a national language, including some simplified version of it. I believe that much of the difficulty in the international language question lies precisely in lack of clarity as to these fundamental functions.

There are two considerations, often intermingled in practice, which arouse the thought of an international language. The first is the purely practical problem of facilitating the growing need for international

communication in its most elementary sense. A firm, for instance, that does business in many countries of the world is driven to spend an enormous amount of time, labour, and money in providing for translation services. From a purely technological point of view, all this is sheer waste, and while one accepts the necessity of going to all the linguistic trouble that the expansion of trade demands, one does so with something like a shrug of the shoulder. One speaks of a 'necessary evil.' Again, at an international scientific meeting one is invariably dissappointed to find that the primary difficulty of communicating with foreign scientists because of differences of language habits makes it not so easy to exchange ideas of moment as one had fantasied might be the case before setting sail. Here again one speaks of a 'necessary evil,' and comforts oneself with the reflection that if the scientific ideas which it was not too easy to follow at the meeting are of moment they will, sooner or later, be presented in cold print, so that nothing is essentially lost. One can always congratulate oneself on having had an interesting time and on having made some charming personal contacts. Such examples can, of course, be multiplied *ad infinitum*. Too much is not made, as a rule, of any specific difficulty in linguistic communication, but the cumulative effect of these difficulties is stupendous in magnitude. Sooner or later one chafes and begins to wonder whether the evil is as 'necessary' as tradition would have it. Impatience translates itself into a desire to have something immediate done about it all, and, as is generally the case with impatience, resolves itself in the easiest way that lies ready to hand. Why not push English, for instance, which is already spoken over a larger area than any other language of modern times, and which shows every sign of spreading in the world of commerce and travel? The consideration which gives rise to reflections of this sort, grounded in impatience as it is, looks for no more worthy solution of the difficulty than a sort of minimum language, a *lingua franca* of the modern world. Those who argue in this spirit invariably pride themselves on being 'practical,' and, like all 'practical' people, they are apt to argue without their host.

The opposed consideration is not as easy to state and can be so stated as to seem to be identical with the first. It should be put in something like the following form: An international auxiliary language should serve as a broad base for every type of international understanding, which means, of course, in the last analysis, for every type of expression of the human spirit which is of more than local interest, which in turn can be restated so as to include any and all human interests. The exigencies of trade or travel are from this point of view merely some of

the more obvious symptoms of the internationalizing of the human mind, and it would be a mistake to expect too little of an organ of international expression. But this is not all. The modern mind tends to be more and more critical and analytical in spirit, hence it must devise for itself an engine of expression which is logically defensible at every point and which tends to correspond to the rigorous spirit of modern science. This does not mean that a constructed international language is expected to have the perfection of mathematical symbolism, but it must be progressively felt as moving in that direction. Perhaps the speakers of a national language are under profound illusions as to the logical character of its structure. Perhaps they confuse the comfort of habit with logical necessity. If this is so—and I do not see how it can be seriously doubted that it is—it must mean that in the long run the modern spirit will not rest satisfied with an international language that merely extends the imperfections and provincialisms of one language at the expense of all others.

These two opposing considerations seem to me to be the primary ones. They may be rephrased as "what can be done right now" and "what should be done in the long run." There are also other considerations that are of importance, and among them perhaps the most obvious is the attitude of people toward the spread or imposition of any national language which is not their own. The psychology of a language which, in one way or another, is imposed upon one because of factors beyond one's control, is very different from the psychology of a language that one accepts of one's free will. In a sense, every form of expression is imposed upon one by social factors, one's own language above all. But it is the thought or illusion of freedom that is the important thing, not the fact of it. The modern world is confronted by the difficulty of reconciling internationalism with its persistent and tightening nationalisms. More and more, unsolicited gifts from without are likely to be received with unconscious resentment. Only that can be freely accepted which is in some sense a creation of all. A common creation demands a common sacrifice, and perhaps not the least potent argument in favour of a constructed international language is the fact that it is equally foreign, or apparently so, to the traditions of all nationalities. The common difficulty gives it an impersonal character and silences the resentment that is born of rivalry. English, once accepted as an international language, is no more secure than French has proved to be as the one and only accepted language of diplomacy or as Latin has proved to be as the international language of science. Both French and Latin are involved with nationalistic and religious implica-

tions which could not be entirely shaken off, and so, while they seemed for a long time to have solved the international language problem up to a certain point, they did not really do so in spirit. English would probably fare no better, and it is even likely that the tradition of trade, finance, and superficial practicality in general that attaches to English may, in the long run, prove more of a hindrance than a help to the unreserved acceptance of English as an adequate means of international expression. One must beware of an over-emphasis on the word 'auxiliary.' It is perfectly true that for untold generations to come an international language must be auxiliary, must not attempt to set itself up against the many languages of the folk, but it must for all that be a free powerful expression of its own, capable of all work that may reasonably be expected of language and protected by the powerful negative fact that it cannot be interpreted as the symbol of any localism or nationality.

Whether or not some national language, say, English, or a constructed language, say Esperanto, is to win out in the immediate future, does not depend primarily on conscious forces that can be manipulated, but on many obscure and impersonal political, economic and social determinants. One can only hope that one senses the more significant of these determinants and helps along with such efforts as one can master. Even if it be assumed for the sake of argument that English is to spread as an auxiliary language over the whole world, it does not in the least follow that the international language problem is disposed of. English, or some simplified version of it, may spread for certain immediate and practical purposes, yet the deeper needs of the modern world may not be satisfied by it and we may still have to deal with a conflict between an English that has won a too easy triumph and a constructed language that has such obvious advantages of structure that it may gradually displace its national rival.

What is needed above all is a language that is as simple, as regular, as logical, as rich, and as creative as possible; a language which starts with a minimum of demands on the learning capacity of the normal individual and can do the maximum amount of work; which is to serve as a sort of logical touchstone to all national languages and as the standard medium of translation. It must, ideally, be as superior to any accepted language as the mathematical method of expressing quantities and relations between quantities is to the more lumbering methods of expressing these quantities and relations in verbal form. This is undoubtedly an ideal which can never be reached, but ideals are not meant to be reached: they merely indicate the direction of movement.

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I spoke before about the illusions that the average man has about the nature of his own language. It will help to clarify matters if we take a look at English from the standpoint of simplicity, regularity, logic, richness, and creativeness. We may begin with simplicity. It is true that English is not as complex in its formal structure as is German or Latin, but this does not dispose of the matter. The fact that a beginner in English has not many paradigms to learn gives him a feeling of absence of difficulty, but he soon learns to his cost that this is only a feeling, that in sober fact the very absence of explicit guide-posts to structure leads him into all sorts of quandaries. A few examples will be useful. One of the glories of English simplicity is the possibility of using the same word as noun and verb. We speak, for instance, of "having cut the meat" and of "a cut of meat." We not only "kick a person," but "give him a kick." One may either "ride horseback" or "take a ride." At first blush this looks like a most engaging rule but a little examination convinces us that the supposed simplicity of word-building is a mirage. In the first place, in what sense may a verb be used as a noun? In the case of "taking a ride" or "giving a kick" the noun evidently indicates the act itself. In the case of "having a cut on the head" or "eating a cut of meat," it just as clearly does not indicate the act itself but the result of the act, and these two examples do not even illustrate the same kind of result, for in the former case the cut is conceived of as the wound that results from cutting, whereas in the latter case it refers to the portion of meat which is loosened by the act of cutting. Anyone who takes the trouble to examine these examples carefully will soon see that behind a superficial appearance of simplicity there is concealed a perfect hornet's nest of bizarre and arbitrary usages. To those of us who speak English from the earliest years of our childhood these difficulties do not readily appear. To one who comes to English from a language which possesses a totally different structure such facts as these are disconcerting. But there is a second difficulty with the rule, or tendency, which allows us to use the unmodified verb as a noun. Not only is the function of the noun obscure, but in a great many cases we cannot use it at all, or the usage is curiously restricted. We can "give a person a shove" or "a push," but we cannot "give him a move" nor "a drop" (in the sense of causing him to drop). We can "give one help," but we "give obedience," not "obey." A complete examination, in short, of all cases in which the verb functions as a noun would disclose two exceedingly cheerless facts: that there is a considerable number of distinct senses in which the verb may be so employed, though no rule can be given as to which of these possible

senses is the proper one in any particular case or whether only one or more than one such meaning is possible; and that in many cases no such nouns may be formed at all, but that either nouns of an entirely different formation must be used or else that they are not possible at all. We thus have to set up such rather cranky-looking configurations as

to help:help = to obey:obedience
= to grow:growth
= to drown:drowning,

a set-up which is further complicated by the fact that such a word as 'drowning' not only corresponds to such words as 'help' and 'growth,' but also to such words as 'helping' and 'growing.' The precise disentanglement of all these relations and the obtaining of anything like assurance in the use of the words is a task of no small difficulty. Where, then, is the simplicity with which we started? It is obviously a phantom. The English-speaking person covers up the difficulty for himself by speaking vaguely of idioms. The real point is that behind the vagaries of idiomatic usage there are perfectly clear-cut logical relations which are only weakly brought out in the overt form of English. The simplicity of English in its formal aspect is, therefore, really a pseudo-simplicity or a masked complexity.

Another example of apparent, but only apparent, simplicity in English is the use of such vague verbs as 'to put' and 'to get.' To us the verb 'put' is a very simple matter, both in form and in use. Actually it is an amazingly difficult word to learn to use and no rules can be given either for its employment or for its avoidance. 'To put at rest' gives us an impression of simplicity because of the overt simplicity of the structure, but here again the simplicity is an illusion. 'To put at rest' really means 'to cause to rest,' and its apparent analogy to such constructions as 'to put it at a great distance,' so far from helping thought, really hinders it, for the formal analogy is not paralleled by a conceptual one. 'To put out of danger' is formally analogous to 'to put out of school,' but here too the analogy is utterly misleading, unless, indeed, one defines school as a form of danger. If we were to define 'put' as a kind of causative operator, we should get into trouble, for it cannot be safely used as such in all cases. In such a sentence as "The ship put to sea," for example, there is no implied causative relation. If English cannot give the foreigner clear rules for the employment of verbs as nouns or for such apparently simple verbs as 'put,' what advantage is derived by him from the merely negative fact that he has not much formal grammar to learn in these cases? He may well

feel that the apparent simplicity of English is purchased at the price of a bewildering obscurity. He may even feel that the mastery of English usage is, in the long run, much more difficult than the application of a fairly large number of rules for the formation of words, so long as these rules are unambiguous.

English has no monopoly of pseudo-simplicity. French and German illustrate the misleading character of apparent grammatical simplicity just as well. One example from French will serve our purpose. There is no doubt that the French speaker feels that he has in the reflexive verb a perfectly simple and, on the whole, unambiguous form of expression. A logical analysis of reflexive usages in French shows, however, that this simplicity is an illusion and that, so far from helping the foreigner, it is more calculated to bother him. In some cases the French reflexive is a true reflexive; that is, it indicates that the subject of the sentence is the same as the object. An example of a reflexive verb of this sort would be *se tuer*, 'to kill oneself.' To French feeling this sort of verb is doubtless identical with the type illustrated by *s'amuser*. Logically, however, one does not 'amuse oneself' in the sense in which one 'kills oneself.' The possibility of translating 'to amuse oneself' into 'to have a good time' and the impossibility of translating 'to kill oneself' into 'to have a bad time killing,' or something of that sort, at once shows the weakness of the analogy. Logically, of course, *s'amuser* is not a true reflexive at all, but merely an intransitive verb of the same general type as 'to rejoice' or 'to laugh' or 'to play.' Furthermore, the French verb *se battre* gives the Frenchman precisely the same formal feeling as *se tuer* and *s'amuser*. Actually it is a reciprocal verb which may be translated as 'to strike one another' and, therefore, 'to fight.' Finally, in such a verb as *s'étendre*, 'to extend' or 'to stretch,' the Frenchman distinctly feels the reflexive force, the stretching of the road, for instance, being conceived of as a self-stretching of the road, as though the road took itself and lengthened itself out. This type of verb may be called a pseudo-reflexive, or a non-agentive active verb, the point being that the action, while of a type that is generally brought about by an outside agency, is conceived of as taking place without definite agency. In English, verbs of this kind are regularly used without the reflexive, as in 'the road stretches,' 'the string breaks,' 'the rag tears,' 'the bag bursts,' which are the non-agentive correspondents of such usages as 'he stretches the rubber band,' 'he breaks the string,' 'he tears the rag,' 'he bursts the balloon.' It should be clear that a linguistic usage, such as the French reflexive, which throws together four such logically distinct categories as the true reflexive, the simple intransitive, the reciprocal,

and the non-agentive active, purchases simplicity at a considerable price. For the Frenchman such usage is convenient enough and no ambiguity seems to result. But for the outsider, who comes to French with a different alignment of forms in his mind, the simplicity that is offered is puzzling and treacherous.

These examples of the lack of simplicity in English and French, all appearances to the contrary, could be multiplied almost without limit and apply to all national languages. In fact, one may go so far as to say that it is precisely the apparent simplicity of structure which is suggested by the formal simplicity of many languages which is responsible for much slovenliness in thought, and even for the creation of imaginary problems in philosophy. What has been said of simplicity applies equally to regularity and logic, as some of our examples have already indicated. No important national language, at least in the Occidental world, has complete regularity of grammatical structure, nor is there a single logical category which is adequately and consistently handled in terms of linguistic symbolism. It is well known that the tense systems of French, English and German teem with logical inconsistencies as they are actually used. Many categories which are of great logical and psychological importance are so haltingly expressed that it takes a good deal of effort to prove to the average man that they exist at all. A good example of such a category is that of 'aspect,' in the technical sense of the word. Few English-speaking people see such a locution as 'to burst into tears' or 'to burst out laughing' as much more than an idiomatic oddity. As a matter of fact, English is here trying to express, as best it can, an intuition of the 'momentaneous aspect'; in other words, of activity seen as a point in contrast to activity seen as a line. Logically and psychologically, nearly every activity can be thought of as either point-like or line-like in character, and there are, of course, many expressions in English which definitely point to the one or to the other, but the treatment of these intuitions is fragmentary and illogical throughout.

A standard international language should not only be simple, regular, and logical, but also rich and creative. Richness is a difficult and subjective concept. It would, of course, be hopeless to attempt to crowd into an international language all those local overtones of meaning which are so dear to the heart of the nationalist. There is a growing fund of common experience and sentiment which will have to be expressed in an international language, and it would be strange if the basic fund of meanings would not grow in richness with the interactions of human beings who make use of the international medium.

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The supposed inferiority of a constructed language to a national one on the score of richness of connotation is, of course, no criticism of the idea of a constructed language. All that the criticism means is that the constructed language has not been in long-continued use. As a matter of of fact, a national language which spreads beyond its own confines very quickly loses much of its original richness of content and is in no better case than a constructed language.

More important is the question of creativeness. Here there are many illusions. All languages, even the most primitive, have very real powers of creating new words and combinations of words as they are needed, but the theoretical possibilities of creation are in most of these national languages which are of importance for the international language question thwarted by all sorts of irrelevant factors that would not apply to a constructed language. English, for instance, has a great many formal resources at its disposal which it seems unable to use adequately; for instance, there is no reason why the suffix *-ness* should not be used to make up an unlimited number of words indicating quality, such as 'smallness' and 'opaqueness,'' yet we know that only a limited number of such forms is possible. One says 'width,' not 'wideness'; 'beauty,' not 'beautifulness.' In the same way, such locutions as 'to give a kick' and 'to give a slap' might be supposed to serve as models for the creation of an unlimited number of momentaneous verbs, yet the possibilities of extending this form of usage are strictly limited. The truth is that sentiment and precedent prevent the national language, with its accepted tradition, from doing all it might do, and the logically possible formations of all kinds which would be felt as awkward or daring in English, or even in German, could be accepted as the merest matters of course in an international language that was not tied to the dictates of irrational usage.

We see, then, that no national language really corresponds in spirit to the analytic and creative spirit of modern times. National languages are all huge systems of vested interests which sullenly resist critical inquiry. It may shock the traditionalist to be told that we are rapidly getting to the point where our national languages are almost more of a hindrance than a help to clear thinking; yet how true this is is significantly illustrated by the necessity that mathematics and symbolic logic have been under of developing their own systems of symbolism. There is a perfectly obvious objection that is often raised at this point. We are told that normal human expression does not crave any such accuracy as is attained by these rigorous disciplines. True, but it is not a question of remodeling language in the spirit of mathe-

matics and symbolic logic, but merely of giving it the structural means whereby it may refine itself in as economical and unambiguous a manner as possible.

It is likely that the foundations of a truly adequate form of international language have already been laid in Esperanto and other proposed international auxiliary languages, but it is doubtful if the exacting ideal that we have sketched is attained by any one of them, or is likely to be attained for some time to come. It is, therefore, highly desirable that along with the practical labour of getting wider recognition of the international language idea, there go hand in hand comparative researches which aim to lay bare the logical structures that are inadequately symbolized in our present-day languages, in order that we may see more clearly than we have yet been able to see just how much of psychological insight and logical rigour have been and can be expressed in linguistic form. One of the most ambitious and important tasks that can be undertaken is the attempt to work out the relation between logic and usage in a number of national and constructed languages, in order that the eventual problem of adequately symbolizing thought may be seen as the problem it still is. No doubt it will be impossible, for a long time to come, to give a definite answer to all of the questions that are raised, but it is something to raise and define the questions.

I have emphasized the logical advantages of a constructed international language, but it is important not to neglect the psychological ones. The attitude of independence toward a constructed language which all national speakers must adopt is really a great advantage, because it tends to make man see himself as the master of language instead of its obedient servant. A common allegiance to form of expression that is identified with no single national unit is likely to prove one of the most potent symbols of the freedom of the human spirit that the world has yet known. As the Oriental peoples become of more and more importance in the modern world, the air of sanctity that attaches to English or German or French is likely to seem less and less a thing to be taken for granted, and it is not at all unlikely that the eventual triumph of the international language movement will owe much to the Chinaman's and the Indian's indifference to the vested interests of Europe, though the actual stock of basic words in any practical international language is almost certain to be based on the common European fund. A further psychological advantage of a constructed language has been often referred to by those who have had experience with such languages as Esperanto. This is the removal of fear in the public use of a language other than one's native tongue.

The use of the wrong gender in French or any minor violence to English idiom is construed as a sin of etiquette, and everyone knows how paralyzing on freedom of expression is the fear of committing the slightest breach of etiquette. Who knows to what extent the discreet utterances of foreign visitors are really due to their wise unwillingness to take too many chances with the vagaries of a foreign language? It is, of course, not the language as such which is sinned against, but the conventions of fitness which are in the minds of the natives who act as custodians of the language. Expression in a constructed language has no such fears as these to reckon with. Errors in Esperanto speech are not sins or breaches of etiquette; they are merely trivialities to the extent that they do not actually misrepresent the meaning of the speaker, and as such they may be ignored.

In the educational world there is a great deal of discontent with the teaching of classical and modern languages. It is no secret that the fruits of language study are in no sort of relation to the labour spent on teaching and learning them. Who has not the uncomfortable feeling that there is something intellectually dishonest about a course of study that goes in for a half-hearted tinkering with, say, Latin and two modern languages, with a net result that is more or less microscopic in value? A feeling is growing that the study of foreign languages should be relegated to the class of technical specialties and that the efforts of educators should be directed rather toward deepening the conceptual language sense of students in order that, thus equipped, they may as occasion arises be in a better position to learn what national languages they may happen to need. A well-constructed international language is much more easily learned than a national language, sharpens one's insight into the logical structure of expression in a way that none of these does, and puts one in possession of a great deal of lexical material which can be turned to account in the analysis of both the speaker's language and of most others that he is likely to want to learn. Certain beginnings have already been made toward the adoption of international language study as a means toward general language work. Time alone can tell whether this movement is a fruitful one, but it is certainly an aspect of the international language question that is worth thinking about, particularly in America, with its growing impatience of the largely useless teaching of Latin, French, German, and Spanish in the high schools. The international language movement has had, up to the present time, a somewhat cliquish or esoteric air. It now looks as though it might take on the characteristics of an international Open Forum. The increasing degree to which linguists, mathematicians and scientists

have been thinking about the problem is a sign that promises well for the future. It is a good thing that the idea of an international language is no longer presented in merely idealistic terms, but is more and more taking on the aspect of a practical or technological problem and of an exercise in the cleaning up of the thought process. Intelligent men should not allow themselves to become international language doctrinaires. They should do all they can to keep the problem experimental, welcoming criticism at every point and trusting to the gradual emergence of an international language that is a fit medium for the modern spirit.

The spirit of logical analysis should in practice blend with the practical pressure for the adoption of some form of international language, but it should not allow itself to be stampeded by it. It would be exceedingly unfortunate if an international language, whether Esperanto or English or some form of simplified English, were looked upon as thenceforth sacred and inviolate. No solution of the international language problem should be looked upon as more than a beginning toward the gradual evolution, in the light of experience and at the hand of all civilized humanity, of an international language which is as rich as any now known to us, is far more creative in its possibilities, and is infinitely simpler, more regular, and more logical than any one of them.

Editorial Note

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WANTED: A WORLD LANGUAGE

BY EDWARD SAPIR

As to the theoretical desirability of an international auxiliary language there can be little difference of opinion. But as to just what factors in the solution of the problem should be allowed to weigh most heavily there is room for every possible difference of opinion, and so it is not surprising that interlinguists are far from having reached complete agreement. The crucial differences lie not so much between one constructed language and another as between the idea of a constructed language and that of an already established national one, whether in its traditional form or in some simplified form.

It is not uncommon to hear it said by those who stand somewhat outside the movement that some such regular system as Esperanto is theoretically desirable, but that it is of little use to work for it because English is already *de facto* the international language of modern times—if not altogether at the moment, then in the immediate future—, that English is simple enough and regular enough to satisfy all practical requirements, and that the precise form of it as an international language may well be left to historical and psychological factors that one need not worry about in advance. This point of view has a certain pleasing plausibility about it but, like so many things that seem plausible and effortless, it may none the less embody a number of fallacies.

There are two considerations, often intermingled in practice, which arouse the thought of an international language. The first is the purely practical problem of facilitating the growing need for international communication in its most elementary sense. A firm, for instance, that does business in many countries is driven to spend an enormous amount of time, labor, and money in providing a translation service. All this is sheer waste. Again, at an international scientific meeting one is always disappointed to find that the difficulty of communicating with foreign scientists makes it much harder to exchange ideas than one had fancied might be the case before setting sail. Such examples might be multiplied *ad infinitum*. Sooner or later one chafes and begins to wonder whether the evil is as necessary as tradition would have it. Impatience translates itself into a desire to have something immediate done about it, and, as is generally the case with impatience, resolves itself in the easiest way that lies to hand. Why not push English, for instance, which is already spoken over a larger area than any other language of modern times and which shows every sign of spreading? But reflections of this sort, grounded in impatience as they are, look for no more worthy solution of the difficulty than a sort of minimum language, a *lingua franca* of the modern world. Those who argue in this spirit invariably pride themselves on being "practical," and, like all "practical" people, they are apt to argue without their host.

The opposed consideration may be put in something like the following form: An international auxiliary language should serve as a broad base for every type of international understanding, which means for every type of expression of the human spirit which is of more than local interest. The exigencies of trade or travel are from this point of view merely some of the more obvious symptoms of the internationalizing of the human mind, and it would be a mistake to ask too little of an organ of international expression.

But this is not all. The modern mind tends to be more and more critical and analytical in spirit, hence it must devise for itself an engine of expression which is logically defensible at every point and which tends to correspond to the rigorous spirit of modern science. This does not mean that a constructed international language is expected to have the perfection of mathematical symbolism, but it must be progressively felt as moving in that direction. Perhaps the speakers of a national language are under profound illusions as to the logical character of its structure. Perhaps they confuse the comfort of habit with logical necessity. If this is so—and I do not see how it can be seriously doubted that it is—it must mean that in the long run the modern spirit will not rest satisfied with an international language that merely extends the imperfections and provincialisms of one language at the expense of all others.

There are also other considerations that are of importance, and among them perhaps the most obvious is the attitude of people toward the spread or imposition of any national language which is not their own. The psychology of a language which, in one way or another, is imposed upon one because of factors beyond one's control is very different from the psychology of a language that one accepts of one's free will. In a sense, every form of expression is imposed upon one by social factors, one's own language above all. But it is the thought or illusion of freedom that is the important thing, not the fact of it.

The modern world is confronted by the difficulty of reconciling internationalism with its persistent and tightening nationalisms. More and more, unsolicited gifts from without are likely to be received with unconscious resentment. Only that can be freely accepted which is in some sense a creation of all. A common creation demands a common sacrifice, and perhaps not the least potent argument in favor of a constructed international language is the fact that it is equally foreign, or apparently so, to the traditions of all nationalities. The common difficulty gives it an impersonal character and silences the resentment that is born of rivalry.

English, as an international language, is no more secure than French has proved to be as the accepted language of diplomacy, or as Latin has proved to be as the international language of science. Both French and Latin are involved with nationalistic and religious implications which could not be entirely shaken off, and so, while they seemed for a time to have solved the international language problem up to a certain point, they did not really do so in spirit. English would probably fare no better, and it is even likely that the tradition of superficial practicality that attaches to it may, in the long run, prove more of a hindrance than a help to its acceptance.

One must beware of an over-emphasis on the word "auxiliary." It is perfectly true that for generations to come an international language must be auxiliary, must not attempt to set itself up against the many languages of the folk, but it must for all that be a free and powerful expres-

tion of its own, capable of all work that may reasonably be expected of language and protected by the powerful negative fact that it cannot be interpreted as the symbol of any nationality.

Even if it be assumed for the sake of argument that English is to spread as an auxiliary language over the whole world, it does not follow that the international language problem is disposed of. English, or some simplified version of it, may spread for certain immediate and practical purposes, yet the deeper needs of the modern world may not be satisfied by it and we may still have to deal with a conflict between an English that has won a too easy triumph and a constructed language that has such obvious advantages of structure that it may gradually displace its national rival.

What is needed above all is a language that is as simple, as regular, as logical, as rich, and as creative as possible; a language which starts with a minimum of demands on the learning capacity of the normal individual and can do the maximum amount of work; which is to serve as a sort of logical touchstone to all national languages and as the standard medium of translation. It must, ideally, be as superior to any accepted language as the mathematical method of expressing quantities and relations between quantities is to the lumbering verbal form. This is undoubtedly an ideal which can never be reached, but ideals are not meant to be reached; they merely indicate the direction of movement.

II

I spoke before about the illusions that the average man has about the nature of his own language. It will help to clarify matters if we take a look at English from the standpoint of simplicity, regularity, logic, richness, and creativeness. We may begin with simplicity. It is true that English is not as complex in its formal structure as is German or Latin, but this does not dispose of the matter. The fact that a beginner in English has not many paradigms to learn gives him a feeling of absence of difficulty, but he soon learns to his cost that this is only a feeling, that in sober fact the very absence of explicit guide-posts to structure leads him into all sorts of quandaries.

A few examples will be useful. One of the glories of English simplicity is the possibility of using the same word as noun and verb. We speak, for instance, of "having cut the meat" and of "a cut of meat." We not only "kick a person," but "give him a kick." One may either "ride horseback" or "take a ride." At first blush this looks like a most engaging rule, but a little examination convinces us that the supposed simplicity of word-building is a mirage. In the first place, in what sense may a verb be used as a noun? In the case of "taking a ride" or "giving a kick" the noun evidently indicates the act itself. In the case of "having a cut on the head" or "eating a cut of meat," it just as clearly does not indicate the act itself but the result of the act, and these two examples do not even illustrate the same kind of result, for in the former case the cut is conceived of as the wound that results from cutting, whereas in the latter case it refers to the portion of meat which is loosened by the act of cutting.

Anyone who takes the trouble to examine these examples carefully will soon see that behind a superficial appearance of simplicity there is concealed a perfect hornet's nest of bizarre and arbitrary usages. To those of us who speak English from our earliest years these difficulties do not readily appear, but to one who comes to

English from a language which possesses a totally different structure they are most disconcerting.

Again, there is a second difficulty with the rule, or tendency, which allows us to use the unmodified verb as a noun. Not only is the function of the noun obscure but in a great many cases we cannot use it at all, or the usage is curiously restricted. We can "give a person a shove" or "a push," but we cannot "give him a move" nor "a drop" (in the sense of causing him to drop). We can "give one help," but we "give obedience," not "obey." A complete examination of all cases in which the verb functions as a noun would disclose two exceedingly cheerless facts: that there is a considerable number of distinct senses in which the verb may be so employed, though no rule can be given as to which of these possible senses is the proper one in any particular case or whether only one or more than one such meaning is possible; and that in many cases no such nouns may be formed at all, but that either nouns of an entirely different formation must be used or else that they are not possible at all. We thus have to set up such rather cranky-looking configurations as

to help: help = to obey: obedience
= to grow: growth
= to drown: drowning,

a set-up which is further complicated by the fact that such a word as drowning not only corresponds to such words as help and growth, but also to such words as helping and growing.

The precise disentanglement of all these relations and the obtaining of anything like assurance in the use of the words is a task of no small difficulty. Where, then, is the simplicity with which we started? It is obviously a phantom. The English-speaking person covers up the difficulty for himself by speaking vaguely of idioms. The real point is that behind the vagaries of idiomatic usage there are perfectly clear-cut logical relations which are only weakly brought out in the overt form of English. The simplicity of English in its formal aspect is, therefore, really a pseudo-simplicity or a masked complexity.

Another example of apparent, but only apparent, simplicity in English is the use of such vague verbs as "to put" and "to get." To us the verb put is a very simple matter, both in form and in use. Actually it is an amazingly difficult word to learn to use and no rules can be given either for its employment or for its avoidance. "To put at rest" gives us an impression of simplicity because of the overt simplicity of the structure, but here again the simplicity is an illusion. "To put at rest" really means "to cause to rest," and its apparent analogy to such constructions as "to put it at a great distance," so far from helping thought, really hinders it, for the formal analogy is not paralleled by a conceptual one. "To put out of danger" is formally analogous to "to put out of school," but here too the analogy is utterly misleading, unless, indeed, one defines school as a form of danger.

If we were to define the word put as a kind of causative operator, we should get into trouble, for it cannot be safely used as such in all cases. In such a sentence as "The ship put to sea," for example, there is no implied causative relation. If English cannot give the foreigner clear rules for the employment of verbs as nouns or for such apparently simple verbs as put, what advantage is derived by him from the merely negative fact that he has not much formal grammar to learn in these cases? He may well feel that the apparent simplicity of English is purchased at the price of a bewildering obscurity. He may even feel that

the mastery of English usage is, in the long run, much more difficult than the application of a fairly large number of rules for the formation of words, so long as these rules are unambiguous.

English has no monopoly of this pseudo-simplicity. French and German illustrate the misleading character of it just as well. One example from French will serve our purpose. There is no doubt that the French speaker feels that he has in the reflexive verb a perfectly simple and, on the whole, unambiguous form of expression. A logical analysis of reflexive usages in French shows, however, that this simplicity is an illusion and that, so far from helping the foreigner, it is more calculated to bother him.

In some cases the French reflexive is a true reflexive; that is, it indicates that the subject of the sentence is the same as the object. An example of a reflexive verb of this sort would be *se tuer*, "to kill oneself." To French feeling this sort of verb is doubtless identical with the type illustrated by *s'amuser*. Logically, however, one does not "amuse oneself" in the sense in which one "kills oneself." The possibility of translating "to amuse oneself" into "to have a good time" and the impossibility of translating "to kill oneself" into "to have a bad time killing," or something of that sort, at once shows the weakness of the analogy. Logically, of course, *s'amuser* is not a true reflexive at all, but merely an intransitive verb of the same general type as "to rejoice" or "to laugh" or "to play."

Furthermore, the French verb *se battre* gives the Frenchman precisely the same formal feeling as *se tuer* and *s'amuser*. Actually, it is a reciprocal verb which may be translated as "to strike one another" and, therefore, "to fight." Finally, in such a verb as *s'étendre*, "to extend" or "to stretch," the Frenchman distinctly feels the reflexive force, the stretching of the road, for instance, being conceived of as a self-stretching of the road, as though the road took itself and lengthened itself out. This type of verb may be called a pseudo-reflexive, or a non-agentive, active verb, the point being that the action, while of a type that is generally brought about by an outside agency, is conceived of as taking place without definite agency.

In English, verbs of this kind are regularly used without the reflexive, as in "the road stretches," "the string breaks," "the rag tears," "the bag bursts," which are the non-agentive correspondents of such usages as "he stretches the rubber band," "he breaks the string," "he tears the rag," "he bursts the balloon." It should be clear that a linguistic usage, such as the French reflexive, which throws together four such logically distinct categories as the true reflexive, the simple intransitive, the reciprocal, and the non-agentive active, purchases simplicity at a considerable price. For the Frenchman such usage is convenient enough and no ambiguity seems to result. But for the outsider, who comes to French with a different alignment of forms in his mind, the simplicity that is offered is puzzling and treacherous.

III

These examples of the lack of simplicity in English and French, all appearances to the contrary, could be multiplied almost without limit and apply to all national languages. In fact, one may go so far as to say that it is precisely the apparent simplicity of structure which is suggested by the formal simplicity of many languages which is responsible for much slovenliness in thought, and even for the creation of imaginary problems in philosophy. What has been said of simplicity applies equally

to regularity and logic, as some of our examples have already indicated. No important national language, at least in the Occidental world, has complete regularity of grammatical structure, nor is there a single logical category which is adequately and consistently handled in terms of linguistic symbolism.

A standard international language should not only be simple, regular, and logical, but also rich and creative. Richness is a difficult and subjective concept. It would, of course, be hopeless to attempt to crowd into an international language all those local overtones of meaning which are so dear to the heart of the nationalist. But there is a growing fund of common experience and sentiment which will have to be expressed in an international language, and it would be strange if the basic fund of meanings would not grow in richness with the interactions of human beings who make use of the new medium. The supposed inferiority of a constructed language to a national one on this score is, of course, no criticism of the idea of a constructed language. All that it means is that the constructed language has not been in long-continued use. As a matter of fact, a national language which spreads beyond its own confines very quickly loses much of its original richness of content and is in no better case than a constructed language.

More important is the question of creativeness. Here there are many illusions. All languages, even the most primitive, have very real powers of creating new words and combinations of words as they are needed, but the theoretical possibilities of creation, in most of the national languages of importance for the international language question, are thwarted by all sorts of irrelevant factors that would not apply to a constructed language. English, to name one, has a great many formal resources at its disposal which it seems unable to use adequately; for instance, there is no reason why the suffix *-ness* should not be used to make up an unlimited number of words indicating quality, such as smallness and opaqueness, yet we know that only a limited number of such forms is possible. One says width, not wideness; beauty, not beautifulness. In the same way, such locutions as "to give a kick" and "to give a slap" might be supposed to serve as models for the creation of an unlimited number of momentaneous verbs, yet the possibilities of extending this form of usage are strictly limited. The truth is that sentiment and precedent prevent the national language, with its accepted tradition, from doing all it might do, and the logically possible formations of all kinds which would be felt as awkward or daring in English, or even in German, could be accepted as the merest matters of course in an international language that was not tied to the dictates of irrational usage.

We see, then, that no national language really corresponds in spirit to the analytic and creative spirit of modern times. National languages are all huge systems of vested interests which sullenly resist critical inquiry. It may shock the traditionalist to be told that we are rapidly getting to the point where our national languages are almost more of a hindrance than a help to clear thinking; yet how true this is is significantly illustrated by the necessity that mathematics and symbolic logic have been under of developing their own systems of symbolism.

It is likely that the foundations of a truly adequate form of international language have already been laid in Esperanto and other proposed international auxiliary languages, but it is doubtful if the exacting ideal that I have sketched is attained by any one of them, or is likely to be attained

for some time to come. It is, therefore, highly desirable that along with the practical labor of getting wider recognition of the international language idea, there go hand in hand comparative researches which aim to lay bare the logical structures that are inadequately symbolized in our present-day languages, in order that we may see more clearly than we have yet been able to see just how much of psychological insight and logical rigor have been and can be expressed in linguistic form.

One of the most ambitious and important tasks that can be undertaken is the attempt to work out the relation between logic and usage in a number of national and constructed languages, in order that the eventual problem of adequately symbolizing thought may be seen as the problem it still is. No doubt it will be impossible, for a long time to come, to give a definitive answer to all of the questions that are raised, but it is something to raise and define the questions.

I have emphasized the logical advantages of a constructed international language, but it is important not to neglect the psychological ones. The attitude of independence toward a constructed language which all national speakers must adopt is really a great advantage, because it tends to make man see himself as the master of language instead of its obedient servant. A common allegiance to a form of expression that is identified with no single national unit is likely to prove one of the most potent symbols of the freedom of the human spirit that the world has yet known.

A further psychological advantage of a constructed language has been often referred to by those who have had experience with such languages as Esperanto. This is the removal of fear in the public use of a language other than one's native tongue. The use of the wrong gender in French or any minor violence to English idiom is construed as a sin of etiquette, and everyone knows how paralyzing on freedom of expression is the fear of committing the slightest breach of etiquette. Who knows to what extent the discreet utterances of foreign visitors are really due to their wise unwillingness to take too many chances with the vagaries of a foreign language? Expression in a constructed language has no such fears as these to reckon with. Errors in Esperanto speech are not sins or breaches of etiquette; they are merely trivialities to the extent that they do not actually misrepresent the meaning of the speaker, and as such they may be ignored.

In the educational world there is a great deal of discontent with the teaching of classical and modern languages. It is no secret that the fruits of language study are in no sort of relation to the labor spent on teaching and learning them. Who has not the uncomfortable feeling that there is something intellectually dishonest about a course of study that goes in for a half-hearted tinkering with, say, Latin and two modern languages, with a net result that is more or less microscopic in value? A feeling is growing that the study of foreign languages should be relegated to the class of technical specialties and that the efforts of educators should be directed rather toward deepening the conceptual language sense of students in order that, thus equipped, they may as occasion arises be in a better position to learn what national languages they may happen to need.

A well-constructed international language is much more easily learned than a national language, sharpens one's insight into the logical structure of expression in a way that none of these does, and puts one in possession of a great deal of lexical material which can be turned to account in the analysis of both the speaker's lan-

guage and of most others that he is likely to want to learn. Certain beginnings have already been made toward the adoption of international language study as a means toward general language work. Time alone can tell whether this movement is a fruitful one, but it is certainly an aspect of the international language question that is worth thinking about, particularly in America, with its growing impatience of the largely useless teaching of Latin, French, German, and Spanish in the high-schools.

The international language movement has had, up to the present time, a somewhat cliquish or esoteric air. It now looks as though it might take on the characteristics of an international Open Forum. The increasing degree to which linguists, mathematicians and scientists have been thinking about the problem is a sign that promises well for the future. It is a good thing that the idea of an international language is no longer presented in merely idealistic terms, but is more and more taking on the aspect of a practical or technological problem and of an exercise in the cleaning up of the thought process.

The spirit of logical analysis should in practice blend with the practical pressure for the adoption of some form of international language, but it should not allow itself to be stampeded by it. It would be exceedingly unfortunate if an international language, whether Esperanto or English or some form of simplified English, were looked upon as thenceforth sacred and inviolate. No solution of the international language problem should be looked upon as more than a beginning toward the gradual evolution, in the light of experience and at the hand of all civilized humanity, of an international language which is as rich as any now known to us, is far more creative in its possibilities, and is in its structure infinitely simpler, more regular, and more logical than any one of them.

Editorial Note

The American Mercury 22 (1932–33), 202–209.

ACTES DU DEUXIÈME CONGRÈS INTERNATIONAL DE LINGUISTES

GENÈVE 25 - 29 AOUT 1931

12. E. SAPIR, *Chicago.*

The case for a constructed international language.

(Résumé.)

It is very important not to confuse the function of an auxiliary international language with that of a national language normally acquired in childhood. The latter serves as the complete symbol of the emotionally integrated and locally oriented personality. The former has the psychologically less far-reaching but, in the modern world, exceedingly useful function of providing the individual with a fit symbol of solidarity with the international world on those planes of interest which have a true international significance.

There is rapidly growing a real international community which is largely debarred from recognizing itself for what it potentially is by the absence of a fit symbol of expression. This community is based on transnational functions of an economic, technological, scientific and ideological nature. It is more or less parallel to the ecclesiastical and scholarly European medieval community that used Latin

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as a medium of expression far more successfully than it could have any other language.

The multiplication of national languages today means a tremendous waste in commercial transactions, adds enormously to the difficulties of travel, is responsible for the extreme cumbersomeness of international political negotiations, and has brought about something like an impasse in the scientific world. The usefulness of exchange professors is more questionable than courtesy allows us to admit. Radio and talking film are ready to bind the peoples of the world together with a common speech that transcends the limited usefulness of national languages, but the present status of human civilization will not allow them to do so.

The educational problem of teaching a variety of separate techniques for the expression of essentially the same meanings is becoming increasingly serious in the modern world. An unnecessary burden is being laid on smaller European nationalities and Oriental peoples in the development of world civilization. The feeling is growing that there is too much to learn that is basically significant for a grasp of the modern world for so much energy to be spent on acquiring irrationally varying symbolisms, none of which can be mastered satisfactorily.

To meet such conditions in the modern world, a highly efficient and maximally simple international language needs to be developed.

A soundly constructed auxiliary language has great advantages. It combines an international function with the elimination of conflicting national claims. It capitalizes for common purposes the stock of words and grammatical techniques which lie scattered about in the more important of the national languages of Europe. It has intellectual value as a help to logical thinking, and as a spur to an analysis which transcends the largely unconscious implications of particular national languages. It encourages in the individual a creative and experimental attitude in the handling of linguistic material.

The term " artificial " does not do psychological nor historical justice to such constructed languages as those in current use. They are artificial in no profounder sense than that in which the technique of an opera singer is " artificial " as compared with the more unconscious technique of a folk-singer.

The current psychological argument as to the supposedly nonvital character of a constructed international language is hardly more than a figure of speech. In learning such a language, for example Esperanto or Interlingua, one builds a new set of habits on the basis of the old linguistic ones. This is precisely what one does when one learns another language as an adult. It is quite a mistake to suppose that an English speaking person's command of French or German is psychologically in the least equivalent to a Frenchman's or a German's command of his native language. All that is managed, in the great majority of cases, is a fairly adequate control of the external features of the foreign language. This incomplete control has, however, the immense advantage of putting the native speaker and the foreigner on a footing of approximate mutual understanding, which is sufficient for the purpose desired.

A constructed international language should be looked at as a system of communication suited to certain difficult situations arising in the sophisticated modern world — a system of signs consciously modified and regularized yet psychologically based on the more unconscious folk-systems of communication, precisely as mathematical, scientific and technological symbolisms are both international in scope and based on differing and less systematized folk usages.

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The fear of the splitting up of an international language into mutually unintelligible dialects is not corroborated by actual experience. The constructed languages in use are so simple phonetically that even with considerable latitude of individual pronunciation no ambiguities of moment are likely to arise. National languages are far more ramified dialectically than a constructed international language would be.

One should carefully refrain from injecting into a discussion of the international language question any of those romantic concepts in regard to language as an " organism " which have already done so much harm in the study of linguistic processes. It is particularly we linguists who stand in danger of making a fetish of the materials of our study. The romanticism of the past should never bind the hand or daunt the will of the future<.>

Editorial Note

Actes du deuxième Congrès international de linguistes, Genève 25 – 29 août 1931. Paris: Librairie d'Amérique et d'Orient Adrien Maisonneuve, 1933, pp. 86–88.

The following errors in the originally published version have been corrected directly into the text printed here (page references are to the original):
p. 86, title: THE CASE FOR CONSTRUCTED (correct: THE CASE FOR A CONSTRUCTED)
p. 88, l. 10: particulary (correct: particularly)
An editorial intervention concerning punctuation has been indicated with <>.

p. 87, l. 1, read: other language (with space between the two words).

ANNEX:

The Statement of the International Auxiliary Language Association made at the second International Conference of Linguists (Geneva, 1931)

In the same section as the one to which Edward Sapir contributed his paper "The Case for [a] Constructed International Language" a statement was presented by the IALA. The statement[1] is reproduced here because of the information it contains on the context in which Sapir, Jespersen, and Collinson wrote on theoretical and practical aspects of international auxiliary languages, and because of its relevance for Sapir's involvement in the project of a "universal conceptual grammar," which he was to carry out through his study of formal and semantic structures corresponding to notions such as "totality," "ending-point" and "grading" [see section V], and also through innovative research, sponsored by the American Council of Learned Societies, on English grammar.

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[1] The statement was published as §14 within the section devoted to the problem of an international auxiliary language (pp. 88–89 in the *Actes*).

[2] The progress reports on this research are included in volume II of *The Collected Works of Edward Sapir*.

STATEMENT BY THE INTERNATIONAL AUXILIARY LANGUAGE ASSOCIATION.

The International Auxiliary Language Association in the United States Incorporated (a private organization familiarly known as IALA), carries on, as one of its main activities, research along three lines : educational, sociological and linguistic.

The aim of the linguistic research is to furnish material which will aid in the development of an international language suited to the functions which it should perform.

At the invitation of IALA and convened by Prof. O. Jespersen, a Meeting of Linguistic Research was held in Geneva March-April, 1930.

For the first time, eminent protagonists of diverse constructed idioms and distinguished philologists from European and American Universities met together not to discuss claims of superiority for any particular auxiliary language but for the purpose of finding ways in which to collaborate toward a common goal. The philologists elaborated a comprehensive plan for linguistic research, based on the suggestions sent by Professors K. Asakawa of Yale University and R. H. Fife of Columbia University. All participants agreed thas it is reasonable to hope that the carrying out of the plan might be a potent factor in bringing about ultimate accord in respect to a definitive form of international language.

The research is planned in three circles :

1. *Foundations of Language*, logical and psychological, an approach to the international language problem. A more philosophical study, according to a scheme drawn up by Professors Sapir and Collinson.

2. *Comparative Studies* of four national languages (English, French, German, Russian) and four international languages. An objective examination of the structure of the selected languages, both with regard to details and to the languages as wholes.

3. *Preparation for Synthesis*. A comprehensive survey and criticism of the results of the first two cycles of research with a view to finding data for a synthetic scheme of a definitive language for international use.

The projected research of the first and second circles includes studies in language structure and vocabulary. The former are to be pursued first and are to serve a material for further labors, namely the working out of a generalised or universal conceptual grammar, and of outlines of structure, both of which might be used as a basis for general language study and as a norm for the structure of an international language.

The research has been begun and is proceeding under the direction of Professor E. Sapir. The work will proceed to completion if sufficient funds are secured.

IALA has no intention of developing a new language. It believes that after its research is finished, an independent body of experts should be entrusted with the task of recommending the form of the ultimate international language. It desires only to do its share in preparing for such a possible body material which will be relevant and worthy. It believes that in the evolution of languages unconscious and conscious processes have gone and must continue to go hand in hand, and that we are living in an age when creative consciousness can take hold more and more in the welding for beneficient purposes of the diverse symbolisms produced by both those processes.

Section Five

Studies in Universal Conceptual Grammar (1930, 1932, 1944)

Introductory Note:

Sapir's Studies in Universal Conceptual Grammar

The three papers included in this section offer an illustration of the "working out of a generalised or universal conceptual grammar" referred to in the "Statement by the International Auxiliary Language Association" [see section IV, Annex]. They exemplify Sapir's general project of studying, in a global and integrated manner, the fundamental problems of language structure(s). From the linguistic point of view the three papers constitute a major contribution to the foundations of linguistic typology (this holds especially for the *Ending-Point Relation* paper), while at the same time they provide meticulous analyses of issues in the grammar and semantics of English. From the philosophical point of view the three papers illustrate in great detail how grammar categorizes experience; they thus lend empirical content and support to Sapir's general statements on the relationship between grammar and experience, as well as to the relativity thesis formulated by Sapir and Whorf.

The place of the three papers within the general project can be defined as follows. The paper on *Totality* and the paper on *Grading* fall within the treatment of "Quantity,"[1] section 7 of the nucleus "Foundations of Language". While *Grading* belongs within "Notions applied to quantification,"[3] itself a subdivision of the "General introduction to the notion of quantity," *Totality* represents one of the types of quantification proper.[4] The *Ending-Point Relation* paper belongs on the one hand within the nucleus "Foundations of Language," more particularly under section 4 "Fundamental relational notions and their linguistic expression," and under section 8 "Space," and on the other hand within the nucleus (or separate project) "Comparative studies in selected national and international languages" (and there it belongs in the section "Formal elements").[5]

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[1] The treatment of Quantity includes: (1) General introduction to the notion of quantity; (2) Classification of quantifiers and quantificates; (3) Types of quantification; (4) Negation in quantitative expressions; (5) Transfer of quantitative concepts. See the "Prefatory Note" to *Totality*.

[2] See the "Prefatory Note" to *Totality*. In the Editorial Note to the *Ending-Point Relation*, this nucleus is identified as a full-scale project titled "Foundations of Language, Logical and Psychological: an Approach to the International Language Problem."

[3] The "Notions" include: (i) Affirmation and negation; (ii) Identity and difference; (iii) Indications; (iv) Grading; (v) Limiting, excluding and gauging; (vi) Composite wholes: aggregation and distribution; (vii) Ratio and proportion; (viii) Normation; see the "Prefatory Note" to *Totality*.

[4] The "Types of quantification" include: (a) Singularity and plurality; (b) Number: cardinals and fractions; (c) Totality; (d) Unity; (e) Duality; (f) Quantification by partials; (g) Indefinite quantification.

[5] See the "Editorial Note" to *Ending-Point Relation*.

The three papers are rich in empirical and theoretical content; their importance and abiding value are discussed by Professor John Lyons, the author of foundational works in theoretical linguistics and semantics.[6] Each of the three papers would merit a monograph-sized study, based on further empirical work, each with a different focus, so as to bring out the specific merits of each of the three. For the present reedition in *The Collected Works of Edward Sapir* it may suffice to point briefly to these merits.

The paper on *Totality* offers interesting insights on our apprehension of entities in the world (as individual objects, as sets or as classes), and makes useful suggestions for the study of whole/part relationships, for the analysis of the linguistic expression of definiteness and indefiniteness, and for the analysis of universality and generality in languages. From this, linguists, but also psychologists and logicians[7] can derive valuable insights. It will not escape the attention of present-day readers that much of the analyses contained in *Totality* can be rephrased in a logically-based model, using arguments, functions and (first and second level) operators.

The paper on *Grading* is of interest to linguists, philosophers, psychologists and scientists in general, in view of the fact that it reveals essential properties of any descriptive (meta)language or terminology, and basic characteristics of (implicit or explicit) judging and measuring.[8] Of fundamental importance are Sapir's remarks on existents and occurrents, on the difference between a polar (*good/bad*) vs. scalar (*cold/cool/lukewarm/warm/hot*) qualification/quantification, on the possibility of a static vs. dynamic perspective, coupled with a specific directionality. In this paper Sapir reflects on basic mechanisms of our linguistic thinking and of our (linguistic) dealing with the world. In spite of being the most theoretical[9] of the three papers the study on *Grading* contains interesting material for the descriptive linguist[10] (e.g., on the linguistic correlates of explicit and implicit grading, or on the morphological expression of comparison, as well as the expression of negation combined with qualification, etc.).

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[6] See, e.g., *Introduction to Theoretical Linguistics* (London/New York, 1968); *Semantics* (London/New York 1977, 2 vols); *Language and Linguistics* (London/New York, 1981); *Linguistic Semantics: An Introduction* (London/New York, 1995).

[7] See, e.g., the distinction between subsumption and subordination (and the linguistic correlates of this distinction).

[8] Sapir speaks of "perceptions of 'envelopment'."

[9] This probably has to do with the fact that the paper was written with the intent "to explore the sadly neglected field of the congruities and non-congruities of logical and psychological meaning with linguistic form."

[10] Pragmaticians will also be interested in Sapir's observations on the "kinaesthetic feeling" of graded terms and on "subjective grading values."

The *Ending-Point Relation* paper is the only one of the three that is explicitly comparative, applying a parallel approach to English, German and French; it is also the one that is truly corpus-oriented and has an outspokenly lexicological basis, as is clear from the selection of examples taken from lexicographical sources. The paper deals with spatial relations as expressed at various levels (propositional, syntagmatic, grammatico-lexical, morphemic) within a language; its methodological frame, which makes use of reference-points, relators, and oriented relations, can be easily extended to the study of temporal relations.[11]

The contemporary reader of these three papers —still largely ignored by the linguistic community— cannot but appreciate their methodological value and the scrupulously gathered documentary material; on the other hand, one wonders why these three papers were conceived and written without any reference to related work or related approaches of European scholars.[12]

Pierre SWIGGERS

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[11] One can think here, e.g., of Hans Reichenbach's model proposed in *Elements of Symbolic Logic* (New York, 1947); see also, in the same vein, Norbert Hornstein, "Towards a Theory of Tense", *Linguistic Inquiry* 8 (1977), 521–557. Reichenbach's (basically ternary) model underlies much of current work in the study of tense systems.

[12] Useful insights on the linguistic expression in French or in Russian of the conceptual relations studied by Sapir and Swadesh can be found in Charles Bally's books *Précis de stylistique* (Genève, 1905), *Traité de stylistique française* (Heidelberg/Paris, 1909, 2 vols.) and *Linguistique générale et linguistique française* (Paris, 1932), in Ferdinand Brunot, *La pensée et la langue* (Paris, 1922), and Lucien Tesnière, *Petite grammaire russe* (Paris, 1934).

Introduction to Sapir's texts "Totality," "Grading," and "The Expression of the Ending-Point Relation"

Sapir is not generally thought of as a semanticist. When he is cited in this connection in the literature, it tends to be either for his famous assertion of "the psychological reality" of the word as a meaningful unit of analysis even in previously unwritten languages such as Nootka[1] or for the support that he gave (in several publications but most notably in "The Status of Linguistics as a Science", 1929) to what subsequently became known as the "Sapir – Whorf hypothesis."

Sapir's authoritative assertion of the fact that the word is not simply the product of literacy and scribal practice, as some linguists had maintained, undoubtedly played an important and perhaps decisive part in the resolution of this particular controversy. But it cannot be said to have influenced the development of 20th-century linguistic semantics to any significant degree: after all, it was generally assumed by traditionalists that the word, rather than the morpheme or the sentence, was the primary unit of semantic (and grammatical analysis), and those who challenged this view had defensible reasons for doing so. As to the so-called Sapir – Whorf hypothesis, this has certainly been of very considerable historical importance and, having gone out of fashion (if that is the right expression) in the 1960s, it is once again on the agenda.[2] It is now generally recognized that Sapir's view is far from being that of an out-and-out linguistic relativist or determinist.

Sapir published very little on semantics as such; or rather, to make the point more precisely, he published very little that he himself referred to as semantics. There is no chapter entitled "Semantics" in his influential (but deliberately non-technical) book *Language*; and, as far as I know, there are no sections that identify semantics as a distinct branch of linguistics in any of his other works, except for the three works devoted explicitly to semantics that are included in the present volume. It must be remembered, however, that in the 1920s and 1930s "semantics" had a more restricted sense than it does in present-day linguistics: it usually referred to what is nowadays called lexical semantics. Moreover, at that time synchronic lexical semantics as an accepted branch of linguistics was still in its infancy. In the sense in which we now understand the term "semantics," a good

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[1] E. Sapir, *Language* (New York, 1921), p. 34.

[2] See now (amongst an increasingly large number of books and articles) Penny Lee, *The Whorf Theory Complex: a Critical Reconstruction* (Amsterdam/Philadelphia, 1996), and John A. Lucy, *Language Diversity and Thought: a Reformulation of the Linguistic Relativity Hypothesis* and *Grammatical Categories and Cognition: a Case Study of the Linguistic Relativity Hypothesis* (both Cambridge, 1992).

deal of Sapir's published work, both theoretical and descriptive, was on semantics, i.e. on the meaning of grammatical categories and constructions. Indeed this is the case for Chapter 5 of his book *Language*.

The three works on semantics reprinted here —"Totality," "The Expression of the Ending-Point Relation in English, French and German" (co-authored with Morris Swadesh) and "Grading"— provide us with the clearest first-hand statement of Sapir's general views on semantics that we are ever likely to have. But they need to be contextualized and, to some degree, interpreted.

Sapir was a theorist, rather than a theoretician: that is to say, he did not seek to formalize or make precise and explicit the theory of the structure of language to which he subscribed. Most of his theoretical principles, moreover, have to be inferred from his descriptive practice and from his often allusive, en passant, explanatory comments upon it. Not only was Sapir not a theoretician. As a theorist, in semantics and more generally, he was, in terms of Isaiah Berlin's history-of-ideas metaphor, a fox rather than a hedgehog: the fox, it will be recalled, knows many things, whereas the hedgehog knows only one.[3] Unlike many structuralists, he was not possessed of a single synoptic principle —the importance of contrast, binarism, markedness or whatever— to which he subordinated all else, systematically and tenaciously, in either his theoretical or his descriptive writings. As far as semantics —the study of meaning— is concerned, he could not but see, on the basis of his own experience, the inadequacy of the various kinds of reductionism that were current, at the time, not only in linguistics, but also in philosophy and psychology. And he was perhaps temperamentally disinclined to commit himself to a single unified and simplifying view about either the grammatical or the semantic structure of language. As I have said above, he was not an out-and-out relativist: he had his own view on what we would now call universal grammar. But he knew too much about different languages and cultures, and about their diversity of patterning (to use one of his favourite terms) for him to commit himself prematurely to the simplifying general statements that, it must be admitted, are often a precondition of theoretical advance. For these and other reasons, in the historiography of linguistics, Sapir is universally acknowledged as a great scholar and an inspiring teacher and as a consummate descriptivist capable of brilliant intuitive flashes of insight, but not as a great theorist, still less as a great theoretician. This generalization holds true perhaps for mainstream linguistics as a whole; it certainly holds for semantics.

Actually, in saying that the three works that are the subject of the present commentary —"Totality," "The Expression of the Ending-Point Relation" and "Grading"— were seen by Sapir himself as making a contribution to semantic theory I am perhaps going beyond the evidence. All three had their origin in

[3] When I wrote this article, I was not consciously aware that Edward Sapir's son Philip had used the same analogy. I am grateful to Pierre Swiggers, the editor of the present volume, for drawing my attention to this. It is of course remarkably apt as far as Edward Sapir is concerned.

Sapir's involvement, together with W.E. Collinson, in the International Auxiliary Language Association (IALA).[4]

It is perhaps no accident that the only one of these three works that appears to have attracted any attention from linguists (most of whom either have had no interest in the International Language movement or have been positively hostile to it) is "Grading," which, when it was published (posthumously) in 1944, bore the subtitle "A study in semantics" and, in its final version at least, was written up as such and made no prefatory mention of the large-scale project sponsored by IALA of which originally it was, presumably, just as much a constitutive part in Sapir's mind as were "Totality" and "The Expression of the Ending-Point Relation." The fact that the work reported in "Grading" had been completed as part of the same IALA-sponsored project some considerable time ("many years") before it was written up and submitted for publication is mentioned in the brief historical note that is appended to it, but there is no reference to this fact in the actual text of the article. Moreover, the same note (written in the first person) assures us, as does the subtitle, that "Grading," in "essentially its present form," was indeed seen by Sapir as a contribution to general semantic theory, independently of any practical application that it might have. His purpose, we are told, was to encourage others "to explore the sadly neglected field of the congruities and non-congruities of logical and psychological meaning with linguistic form." Although we know from other sources that the article had been left by Sapir in "a relatively unfinished state,"[5] there is no reason to doubt that this formulation of Sapir's purpose is reliable. The IALA Statement makes it clear, anyway, that the work in which Sapir and Collinson took the lead was intended to be of use, not only "as a norm for the structure of an international language," but also "as a basis for general language study." And Collinson's 1937 monograph on "Indication," which appeared in the same series as "Totality" and "Ending-Point Relation," is commonly cited in the literature as a contribution to semantics. ("Indication" is the term used by both Collinson and Sapir for what is now called deixis.)

It is perhaps idle to speculate further on the question whether Sapir himself saw "Totality" and "The Expression of the Ending-Point Relation," as well as "Grading" as studies in semantic theory. In retrospect, they can certainly be read as such. Even if we did not have the appended historical note in "Grading" to this effect (and Mandelbaum's helpful editorial comments)[6] it would be evident to anyone reading them from this point of view that all three are terminologically and conceptually consistent. In "Grading" the descriptive analysis of data is illustrative and takes second place to the theoretical points that are being made, whereas in the other two works the opposite is the case.

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[4] See also the introduction to section IV here.

[5] Cf. Zellig Harris, in his review of *Edward Sapir: Selected Writings in Language, Culture and Personality* (ed. D.G. Mandelbaum; Berkeley, 1949) in *Language* 27 (1951), p. 289 [reprinted here].

[6] *Selected Writings, o.c.*, pp. 5–6.

It is impossible, in the present context, to do full justice to the wealth of detail that is contained in each of the three works. Suffice it to say that all of them are marked by Sapir's acknowledged brilliance of descriptive insight, to which I referred above, and that much of the empirical data that they contain is, in my judgment, valid and, to the best of my knowledge, original. Semantics, and more particularly, the investigation of "the congruities and non-congruities of logical and psychological meaning with linguistic form" in the domains of vocabulary and grammar with which Sapir was concerned, is no longer the "sadly neglected field" that it was in the 1920s and early 1930s. The conceptual (and terminological) framework with which, not only linguists, but also psychologists and logicians, operate nowadays is very different from what it was then. Theoreticization and formalization have made great strides in all three disciplines in recent years, and theoretically minded foxes, not to mention the theoreticians and hedgehogs of semantic theory, express themselves very differently from the way in which most of them did sixty or seventy years ago. Consequential allowances must therefore be made by present-day readers of the three works that are the subject of the present commentary for what might otherwise strike them as looseness of expression and imprecision. But it is well worth while their making such allowances. There is still much to be learned from them, not only by theorists and theoreticians of the subject, but also by descriptivists and those of a more empirical bent of mind.

The first general point that needs to be made by way of commentary has to do with Sapir's structuralism. He was a structuralist, not in the narrower sense that this term acquired in the 1950s in what we tend to think of as mainstream American linguistics, but in the broader sense that it had always had in anthropology and the other social sciences and in European linguistics. And he was just as much a structuralist in semantics as he is universally recognized to have been in phonology and morphology. He nowhere makes this absolutely explicit. But his concern with structure (or to use his own term *patterning*) is evident throughout. All three works are studies in what we would now call structural semantics.

But Sapir's structural semantics, unlike the more classical, Saussurean or post-Saussurean, versions, is dynamic rather than static. I do not mean by this that he did not respect the distinction between the synchronic and the diachronic: he certainly did. Nor do I mean that he thought of a language as a metastable system in which (to use the Prague Circle slogan) there is diachrony in synchrony: he may well have done so. The dynamism that I am referring to here is psychological, not chronological.

Like all structural linguists, he looked upon languages as relational systems — as systems in which all units (phonological, morphological and lexical) derive their value from the relations in contrast and equivalence that they contract with one another in the system. And Sapir frequently employed the term "relation" in this connection exactly as other structuralists do. But for him they were not the static relations of a kinetic system in which everything was in flux or, better, under tension. This comes out most clearly, perhaps, in his definition of equality as "a more or less temporary point of passage or equilibrium between "more

than" and "less than" or as a point of arrival in a scale in which the term which is graded is constantly increasing or diminishing" ("Grading", p. 105). Once we have recognized this as Sapir's view in the case of relations of equivalence (or equality), it is easy to see that this is also his view for all the semantic relations that he discusses, not only in "Grading," but also in the other two works. There are perhaps parallels in the work of some other scholars in the structuralist tradition. But Sapir's view of logical form —for this is, in effect, what it is— is a very different view from that of logicians or present-day formal semanticists.

The fact that Sapir's notion of logical form differs from the standard view, in the way that I have indicated, does not mean that it should be dismissed by present-day theorists and theoreticians as unworthy of serious consideration. "Grading" has already had its influence, directly or indirectly, on modern treatments of comparative constructions and antonymy. For example, it is now widely, if not universally accepted by linguists that gradable antonyms, such as "good" and "bad," are always implicitly, if not explicitly, comparative; and various ways of formalizing this insight have been proposed. But there is much more than this to be learned about gradable antonymy and comparatives from Sapir's work.

There is perhaps even more to be learned from Sapir about the topics that he deals with in "Totality" and "The Expression of the Ending-Point Relation," including quantification, whole-part relations, the mass-count distinction, locative and directional constructions and telicity (to use current terminology), which are acknowledged to be of central importance in linguistic semantics and have been researched intensively in recent years. It is worth noting, in this connection, that in one respect at least, as far as structural semantics in America is concerned, Sapir anticipates later theoretical developments: his treatment of what he calls totalization is often implicitly, and occasionally explicitly, componential.

Sapir's discussion of the data that he adduces is always subtle and interesting; and the points that he draws to our attention need to be accounted for, even though, in accounting for them in a contemporary framework, we may find ourselves invoking distinctions that were not part of the linguist's stock-in-trade in his day: between sentences and utterances, between competence and performance, between semantics and pragmatics, etc. In some cases, we may conclude that what Sapir attributes to language itself should be handled in terms of principles or conventions which govern the use of language: e.g., in terms of what is presupposed or implicated, rather than of what is semantically encoded in the language-system. We may even conclude that the dynamism that I have noted as being so characteristic of Sapir's structuralism is a matter of performance, rather than competence, and should be handled, not in linguistic semantics as such, but in pragmatics or psycholinguistics. But this conclusion should not be drawn too hastily. It is still an open question whether the theoretical distinctions to which I have just referred (as they are currently drawn by most theoreticians) are soundly based or not.

I must end this brief commentary on a note of regret. One of Sapir's great strengths was of course his intimate knowledge of a wide range of typologically different languages operating in a variety of cultures. He frequently draws upon

this knowledge in other works; and he would most certainly have done so in his projected work on the grammatical category of aspect (which would presumably have been consistent with the conceptual framework used in "The Expression of the Ending-Point Relation"). In the three works on semantics reprinted here he often supports the generalizations he makes by referring to "many languages," but he does not identify these languages by name or family. "The Expression of the Ending-Point Relation," unlike "Grading" and "Totality," is of course explicitly comparative with respect to English, French and German, and there are interesting points of difference among these three languages. But they are far from being as interesting from a typological point of view as the structural differences to which Sapir, famously, drew the attention of the scholarly world in some of his other publications. Because it is Sapir who is making the generalizations one can perhaps take them on trust. But some of them are no doubt checkable now on the basis of work done from a typological point of view (much of it by Sapir's students) in the years that have passed since the works reprinted in the present volume were written. It would be good to have them checked for particular languages and reformulated in the light of more recent advances in grammatical and semantic theory. The fact that Sapir's three papers on semantics, lexical and grammatical, are now being reprinted in his *Collected Works* should facilitate this task.

Sir John Lyons

Totality (1930)

PREFATORY NOTE

The present paper on Totality is but the first instalment of a general work on language entitled *Foundations of language, logical and psychological, an approach to the international language problem*, by William E. Collinson, Mrs. Alice V. Morris, and Edward Sapir, edited by Mrs. Alice V. Morris. This work is sponsored by the International Auxiliary Language Association. In the preliminary work that has already been done by the three collaborators it soon became evident that many questions of a theoretical and analytical nature would have to be taken up that are of perhaps minor interest for the solution of purely practical problems. The work is intended as an aid toward such solution and for the eventual use of all those who are interested in fundamental problems of language structure, whether they wish to make practical applications of the insights secured to the international language problem or not. This and other papers that may follow from time to time are printed in this place because of the general linguistic interest which it is hoped they possess.

The nucleus of *Foundations of Language* consists of:

1. Introduction
2. Units of communication: the sentence
3. Fundamental types of referents: a natural basis for parts of speech
4. Fundamental relational notions and their linguistic expression
5. Notions of order
6. Indication
7. Quantity
8. Space
9. Time
10. Existents and their linguistic expression: the noun
11. Occurrents and their linguistic expression: the verb
12. Modes of existence and occurrence: the adjective and the adverb
13. Notional inventory of experience: its expression in nuclear words
14. Extension of the nuclear vocabulary: word-building
15. Expressiveness in language

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The present paper on Totality is merely a section of that part of *Foundations of Language* which deals with Quantity. Its place in the total scheme is indicated by the following table of contents of the eventual work on Quantity:

1. General Introduction to notion of quantity
    (a) Notions applied to quantification
        i. Affirmation and negation
        ii. Identity and difference
        iii. Indication
        iv. Grading
        v. Limiting: excluding and gauging
        vi. Composite wholes: aggregation and distribution
        vii. Ratio and proportion
        viii. Normation
    (b) Quantifiables
    (c) Methods of quantification: numbering, measuring, and calculating
    (d) Quantificates
2. Classification of quantifiers and quantificates
3. Types of quantification
    a. Singularity and plurality
    b. Number: cardinals and fractions
    c. Totality
    d. Unity
    e. Duality
    f. Quantification by partials
    g. Indefinite quantification
4. Negation in quantitative expressions
5. Transfer of quantitative concepts

It is a great pleasure to record my indebtedness to Mrs. Morris for her unflagging zeal in the prosecution of the work, of which Totality is a harbinger, and for the extraordinarily acute criticism that she has exercised at its every stage. There is hardly a paragraph in the present paper which has not profited from her keen interest. To Professor Collinson too I am indebted for numerous and valuable suggestions.

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GLOSSARY OF TECHNICAL TERMS

1. *Quantifiable:* anything concerning which quantity may be predicated. It answers to the question 'So and so much (many) what?' or 'To such and such a degree what?'
2. *Quantifier:* a term which expresses any quantitative judgment. It measures or counts or grades a quantifiable. It answers to the question 'How much *or* How many *or* To what degree so and so?' A term which cannot answer one of these questions is not a quantifier.
3. *Quantificate:* a quantified quantifiable; a linguistic expression which indicates that a quantifiable has been quantified. It answers to the question 'How much (many) of what?' or 'To what degree what?' It may serve to quantify further and then becomes a quantifier called a quantificate-quantifier (specialized quantifier).

   NOTE (A. V. M.): Take the sentence 'Four men are coming'. To the question 'Four what?' the answer gives the quantifiable 'men'. To 'How many men?' the answer gives the quantifier 'Four'. To 'How many of what?' the answer gives the quantificate 'Four men'.

   In 'That rose is very red', the question 'very what?' elicits the quantifiable 'red'; 'To what degree red?' elicits the quantifier 'very'; and 'To what degree what?' elicits the quantificate 'very red'.

   'A cupful' as such is a quantificate; it means 'what is contained by a *full cup*'. 'A cupful of tea' is a quantificate of a higher order in which 'tea' is the quantifiable and 'a cupful of' the quantifier (quantificate-quantifier, specialized quantifier).

4. *Direct quantifier:* a quantifier which is directly apprehended, without the necessity of arriving at the intended quantity by going through one or more mathematical operations, e.g. *four, swarm.*
5. *Calculated quantifier:* a quantifier which is apprehended mediately, with the necessity of arriving at the intended quantity by going through one or more mathematical operations, e.g. *the sum of, the whole computed acreage of.*
6. *Totalizer:* a quantifier whose function it is to emphasize the fact that in the given context the quantifiable is not to be thought of as capable of increase, e.g. *all, the whole flock.*

I. WHOLE-PART RELATION AND TYPES OF TOTALIZED EXISTENTS AND OF TOTALITY

The notion of totality may be considered as instinctive in the sense that it so easily and necessarily arises from experience that it is difficult, and for most individuals probably impossible, to reduce it to simpler terms. It seems possible, however, to derive it psychologically from two sorts of experience: (1) the feeling of rest or of inability to proceed after a count, formal or informal, has been made of a set or series or aggregation of objects; (2) the feeling of inability or unwillingness to break up an object into smaller objects. These feelings, which may be schematically referred to as the 'all' and the 'whole' feeling respectively, are correlative to each other. They arise naturally from experience with objects.

The mind views objects as if they functioned in two ways, tending, on the one hand, to keep their distance from each other—e.g., a table as distinct from a chair; on the other hand, to cohere in functional units—e.g., a table and a chair as necessary parts of a set of furniture and as jointly excluding such other objects as people. Furthermore, such objects as tables and chairs may frequently be viewed as falling apart into separate segments, objects of a secondary or functionally lower order, which may, actually or in imagination, be reassembled into the 'whole' table and the 'whole' chair. We may count the segments of a table until we have 'all' of them needed for the reconstruction of the table, just as we can count the pieces of furniture needed to make up 'all' the members of a set of furniture.

But there is an important difference between the segment as related to the table and the table as related to the set of furniture. The segments have little or no meaning as such. They are merely constituents or functionally meaningless fragments, which the mind at once reassembles into a continuous structure. On the other hand, the table is a significant entity in itself and can be made to cohere with the chair only in a mental sense because of the unitary 'meaning' given to the concept of a set of furniture. The more value we attach to this remoter unity of the set, the greater becomes its psychological resemblance to the more immediately given unity of the table itself, so that we may

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finally complain of 'a broken set', with its concomitant feeling of vexation. The more vivid the feeling of unity of the set, the more applicable to it is the term 'the whole set'; the less vivid the feeling of unity, the more easily we resign ourselves to saying 'all the pieces of the set'. The more vivid the feeling of unity of the table, the more applicable to it are such terms as 'the whole table' or 'the entire table'; the less vivid the feeling of unity, the less unnatural it becomes to speak of it as 'the aggregate of such segments as go to make up the table' or 'all the table-segments'.

We may consider these feelings of 'all' and 'whole' as abstracted from our apprehension of the whole-part relation in existents. If we think of the whole-part relation, as psychologically we must, as involving operations or kinaesthetic experiences in keeping, disintegrating, and aggregating existents, then, if we wish to classify existents in terms of the whole-part relation, we may describe them in terms of those operations and we may distinguish them broadly as non-totalizable and totalizable. The former kind may be called the 'kept' existent, that is, the object preserved as such, thought of as such, neither analyzed nor aggregated. Such an existent can not be totalized, only individualized, e.g. '*the* table', '*the* cheese'. The totalizable existent is one which is thought of as susceptible of various kinds of aggregation, either direct or based on some previous operation of disintegration. When we proceed to apply to such existents the various operations of totalizing, we are driven to analyze them into six types.

1. The existent thought of as divisible into parts but as 'resisting' such division. Such an existent is given as totalized from a potential aggregate, e.g. '*the whole* table', '*the whole quantity of* water'. This type may be named 'whole existent'.

2. The existent thought of as an aggregate of parts derivable from a normally undivided existent. Such an aggregate may be said to 'seek' totalization in the form of type 1, e.g. '*all the parts of* the table', considered as psychologically 'self-driven' toward 'the whole table'. '*All of* the table' more or less adequately expresses this type of totalized existent. 'All of the table' is to 'the whole table' as 3 3 is to 1. This type may be named 'summated existent'.

3, compounded of 1 and 2. The existent thought of as divisible into parts but apprehended as persistently resisting deformation into a summated existent (type 2), e.g. '*The whole of* the table is of oak', '*the whole of* the water is boiling'. Here the mind seems to linger on the wholeness of the existent rather than on the existent itself. This type

may be named 'persistently whole existent' or 'reassertedly whole existent'.

4. The aggregate of existents, each of which is considered as having functional reality. Such an aggregate does not 'seek' totalization but may be said to 'be driven' to it, e.g. '*all* the tables (or cheeses)', considered as psychologically 'driven' toward 'the whole set of tables (or cheeses)'. The 'all' of such an aggregate consists either of a set of terms, say an accidental number series or an accidentally isolated number of existents, that do not cohere except in so far as we make them cohere by mental segregation from other existents—e.g. '*three*'; '*five* tables'; '*five* cheeses'; '*all* the tables (or cheeses)'—(totality arrived at by mere enumeration); or else of a set of terms, say '*a set of* tables' in a given room, or '*a collection of* waters' in an exhibit, which can be thought of as having function apart from the mere fact of aggregation (totality arrived at by some kind of formal assemblage). This type may be named 'aggregate' or 'simple aggregate'.

5. The aggregate thought of as divisible into members or parts and as 'not resisting' such division. Such a collectivity has been totalized from an actual aggregate, e.g. '*the whole set of* tables'. This type may be named 'whole aggregate'.

6, compounded of 4 and 5. The aggregate apprehended as threatening, as it were, to fall apart into a simple aggregate whose totality is 'all', and such threatened deformation being resisted but resisted in vain, e.g. '*all of the set of* tables', or, more briefly, '*all of* the tables (or cheeses)', which is really a compound totalized existent in which the totalizing feeling properly applicable to a summated existent (type 2) is applied to a whole aggregate (type 5). We naturally say 'all the tables' but, preferably, 'all of the tables in this set'. This type may be named 'relapsed collection' or 'reasserted aggregate'.

It is probable that of the types of part-whole existents the ones that are nearest to intuitive or primary observation are the 'kept' non-totalizable existent, the whole existent (type 1) and the simple aggregate (type 4). The whole aggregate (type 5) follows readily on the heels of 4 by the application to it of the integral feeling characteristic of 1; in other words, aggregates may be looked upon, psychologically, as secondary objects created by the transfer of the feeling of individuality to an aggregate. To put it in slightly different terms, 'the whole set of tables' is a metaphor, based on 'the whole table', which reinterprets 'all the tables'. Type 2, a summated existent, is perhaps the most sophisticated of all part-whole existents, and results from the application

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of the aggregational feeling characteristic of a simple aggregate (type 4) to a whole existent (type 1). This transfer mechanism may be expressed by saying that 'all the parts of the table' or 'all of the table' is a metaphor, based on 'all the tables', which reinterprets 'the whole table'. Naturally, the experiences which underlie these transfers are, on the one hand, the coalescence of countable units into functionally close-knit sets, e.g. of the tables and chairs and certain other objects of a well-planned room into a definite set of furniture; and, on the other hand, the frequent psychological breaking up of an object into countable fragments, the object itself being retrospectively analyzed into the ordered sum of these destined fragments.

Taking the six types of totalized existents, we get the following scheme of terms of totality:

Neutral term: *totality*.

1. Totality of an existent which resists division, e.g. '*The whole* table is well made', '*the whole/quantity of*/water is infected'. (Totality of a whole existent.)
2. Totality of parts of a normally undivided existent, e.g. '*All parts of* the (or *all of* the) table are (or is) well made', '*all of* the water is infected'. (Totality of a summated existent.)
3. Totality of an existent which persistently resists division, e.g. '*The whole of* the table is of oak', '*the whole of* the water is infected'. (Totality of a persistently whole existent, or of a reassertedly whole existent.)
4. Totality of existents in a collection, e.g. '*All* the tables have been brought in', '*all the/kinds of*/waters are bottled'. (Totality of an aggregate, or of a simple aggregate.)
5. Totality of an undivided collection or individualized aggregate, e.g. '*The whole set of* tables forms a long line'. (Totality of a whole aggregate.)
6. Totality of an aggregate which has vainly resisted threatened deformation, e.g. '*All of the set of* tables are of oak', '*all of* the tables (in this set) come from France'. (Totality of a relapsed collection, or of a reasserted aggregate.)

II. EXISTENTS 'INDIVIDUALIZED' AND 'INDEFINITELY MASSED'

So far we have been considering whole-part existents without reference to whether or not they have an assignable structure. Existents may be conceived of either as having structure, e.g. *the table*, *the land* belonging to X, *the cheese* formed into a definite object, or as not having structure, e.g. *the wood* as material, *the land* extending indefinitely, *the cheese* thought of as food rather than as shaped. The former type may be called 'individualized', the latter 'indefinitely massed'. In many languages these two types of objects tend to be differently totalized.

In English, totality of an individualized object tends to be expressed as in '*the whole* table', '*the whole* land was annexed'; and totality of an indefinitely massed object as in '*all* the milk has turned sour', '*all* the land was inundated'. Observe that such terms as '*the whole of* the land' (type 3) and '*all of* the land' (type 2) apply only to individualized objects. The *all* of indefinitely massed objects is particularly suited to such abstract entities as 'talk', e.g. '*all* the talk is unnecessary'. '*The whole* talk' necessarily refers to a limited discourse (type 1), '*all of* the talk' to a potentially divided discourse with sections or time-measured parts (type 2), 'during *the whole of* the talk' to a discourse conceived of as a cumulative unit (type 3). Existents which are logically aggregates, such as 'piled up wood', may metaphorically be conceived of as indefinitely massed objects, hence '*all* the wood', rather than '*all the pieces of* wood' collectivized into '*the whole pile of* wood'.[1]

[1] A note of warning. It is not claimed for a moment that the ordinary English uses of 'the whole', 'all of', 'the whole of', and 'all' necessarily correspond to our exacting distinctions, merely that they tend to do so. In actual practice there is considerable confusion.

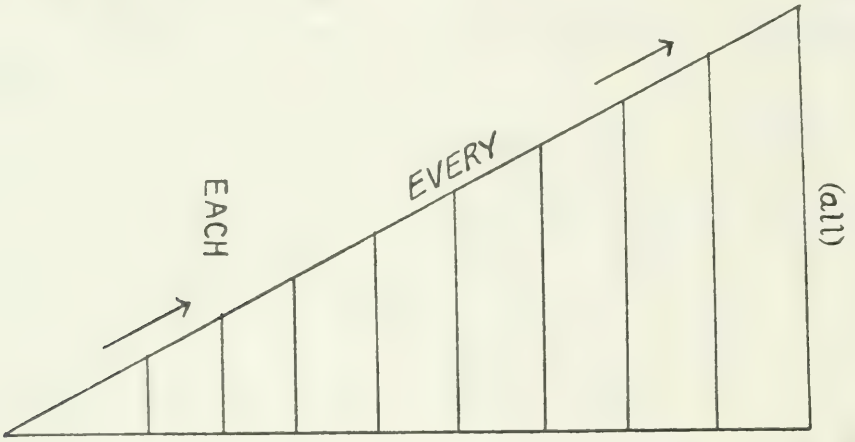
III. SINGULARIZED TOTALIZERS

There are still other distinctions in the expression of totality that must be recognized. One of the most important of these is the difference between the itemizing or singularizing totalizers and the ordinary aggregating ones. The former, of which 'each' and 'every' are the type, do not directly express totality but definitely imply it in a reference which is individual in form. In other words, 'every *a*' singles out a particular *a* only to emphasize the point that all the other *a*'s of the set differ in no relevant respect from it. 'Each' is used preferably for the members of an aggregate of two or, in any event, an aggregate which is numerically small. There is considerable confusion in usage, however, just as there is between the corresponding reciprocals 'each other' and 'one another'. 'Each' differs further from 'every' in individualizing more clearly at the expense of the notion of totality, so that at times this notion becomes quite pale, whereas it is always strongly implied with 'every'. 'Each' is therefore particularly appropriate in all contexts in which the 'every' of an aggregate is looked upon as selected or otherwise specifically determined; hence '*each* member of a series A as compared with *the corresponding* member of a series B', where 'every' would have a blurring, aggregating effect. On the other hand, 'not *every* instance', not 'not *each* instance', because with a negation there can be no true individualizing. Note that the greater individualizing force of 'each' and its restricted reference to a small or easily comprehended aggregate are really two facets of a single psychological fact; for the smaller the aggregate, the more individualized its members tend to become. Perhaps the most accurate distinction that can be made between 'each' and 'every' is this, that 'each' tends to mean 'all, taken one at a time' (in other words, is the meaning of 'all, taken n at a time', when n = 1), whereas 'every' is rather an 'all, accumulating by increments of one'.

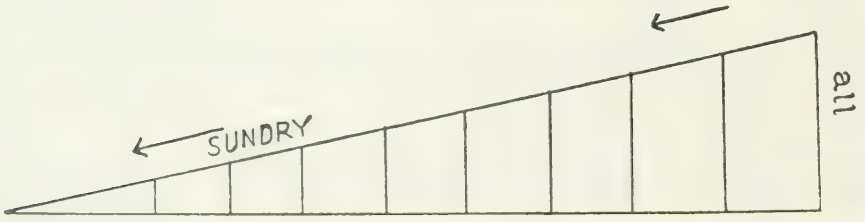
'Each' and 'every' apply primarily to aggregates of type 4, but, just as the notion of 'all' may blend with that of 'the whole (set)' into 'all of' (type 6), so they too blend with it into notions expressed by such terms as '*each of* the men', '*each one of* the men', '*every one* of the men'. It is

natural to say '*every one of* the men in that regiment' but not '*every one of* the men in America', for which '*every* man in America' or '*every* American' would have to be substituted, inasmuch as the totality of men in America forms not a significant assemblage but only a statistical aggregate.

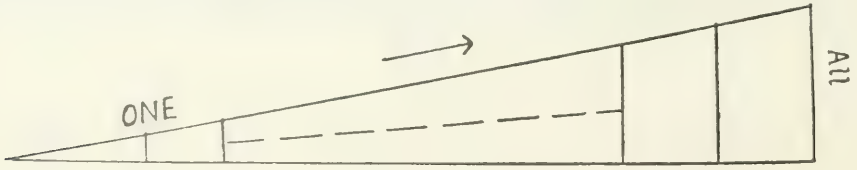
It is interesting to observe that the relative magnitude of 'each' and 'every' is reflected in their positions in the compound cumulative itemizing totalizers '*each and every* man', '*each and every one of* the men'. This feeling may be symbolized as:



The converse feeling is approximately expressed by 'all and sundry':



Another cumulative totalizer of the 'each and every' type is 'one and all', in which the itemizing is so rapid that it is swallowed up, as it were, in the totalizing notion:



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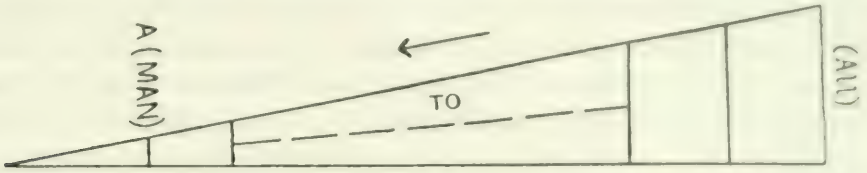
The converse of this seems to be expressed by the use of 'to a man' in such locutions as 'They were annihilated *to a man*':



It is possible also to express the cumulative itemizing feeling without explicit reference to the notion of totality, as in 'to the last man' in such locutions as 'They were annihilated *to the last man*':

to → the last (man) (all)

the last (man) ← to (all)

Inasmuch as the logical 'all' is not actually felt here as either a total arrived at or a total given and then itemized, the feeling of direction in 'to the last man' is ambiguous. It may be interpreted as proceeding either from the single instance to the totality implied by the completion of the count or from the previsaged totality back to the single instance.

IV. DEFINITE AND INDEFINITE TOTALIZERS

A more difficult distinction to make is that of definite and indefinite totalizer. In a sense all totalizers are definite, for in a given aggregate 'all' cannot be ambiguous or indefinite in the sense in which 'some' is indefinite. Nevertheless there is a real difference as to definiteness between 'all the people in the room' and 'all the cardinal points', i.e. 'all four of the cardinal points'. In the former case the totality is predicated of a number which need not be known, in the latter of a known but unexpressed, i.e. an implied, number. 'All' in 'all the people' is an indefinite totalizer; 'all' in 'all the cardinal points' is an implicitly definite totalizer; 'all four' in 'all four of the cardinal points' or 'the four' in 'the four of them' is an explicitly definite totalizer. Many languages possess special terms for certain explicitly definite totalizers, particularly for an aggregate of two, e.g. English '*both* the men', '*both of* the men', '*both parts of* it', where 'both' is the equivalent of 'all two', cf. French 'tous les deux'. Such terms as 'the regiment' (type 5) or 'the pint' (type 1) in 'he drank *the pint* of milk' or '*the deck* of cards' (type 6) may be looked upon as implicitly definite totalizers of specialized types.

V. DIRECT AND CALCULATED TOTALIZERS

So far we have been dealing with direct totalizers, which, like all quantifiers (i.e., terms indicating quantity), may be one-term quantifiers (e.g. *all*, *the whole of*), quanto-quantifiers (e.g. *both* = *all the two*, *all the three parts of*), or compound quantifiers (*each and every one of*).

There are, naturally, also calculated totalizers, of which the additive type is particularly common, e.g. *the sum* (as used in mathematics[2]), *the sum total*, and, of a somewhat more complicated order, terms of the type *net total*, in which there is an implication of going through more than one mathematical operation.

[2] Different, of course, from *the sum* in such locutions as '*the sum* of money which I give you', which is really an indefinite quantifier, equivalent to *the amount of*.

VI. THE ALL OF UNIVERSAL STATEMENTS

Until now we have dealt only with the concept of totality in 'enumerative' (totalized particular) statements (e.g. '*All* the people in this room are wealthy') or in singular statements (e.g. '*The whole* cheese is spoiled'). The question arises of whether or not to look upon the *all* of universal statements (e.g. '*All* men are mortal') as a true totalizer. There is no question here of a true totality, explicitly or implicitly definite or even indefinite (as in '*all* the men in this room', where no count has been made), but of a class. Any example of the class, namely *a man* or *this* or *that* particular man, is not, strictly speaking, a definite part, fraction, of the class (which might then be said to be diminished by one if the example is singled out and dismissed), but merely a particularized representative of the class itself. Hence '*All men* are mortal' says no more than '*Men* are mortal' or '*All the men* who can be thought of are mortal' or '*The men* who can be thought of are mortal' or '*Every man* is mortal' or '*Any man* is mortal' or '*Any men* are mortal' or '*A man* is mortal'. All these locutions are merely periphrases for the more logically expressed universal statement '*Man* is mortal'.

All and *every* in these examples are, then, not totalizers in the strictly logical sense but class-indicators. Inasmuch as the notion of class arises, in experience, from the accumulation of particular instances, the illusory feeling is produced of a prolonged count looking eventually to a closed total (*all*). In other words, *all* in '*All* men are mortal' arises psychologically from the unconscious solution of the illogical proportion:

This man (of those who are here): *all* the men (who are here), a sum =
this man (of all possible men): x, an unknown sum.

But x is not a sum, but a class of indifferent membership as to number.

The pseudo-totalizing nature of *all* in universal statements comes out clearly in English when we try to substitute *all of* (type 6, totality of a reasserted aggregate) for *all*, e.g. '*all of men* are mortal', which is impossible, or '*all of the men* are mortal', which at once takes on the meaning of a totalized particular statement, the reference being to a particular aggregate of men. This is because *all of*, with discrete existents,

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expresses totality of a relapsed collection or of a reasserted aggregate, and the class 'man' is not such a collection or aggregate. It is, furthermore, significant that in speaking of continua or discretes thought of as continuous, whether true (e.g. 'cheese') or metaphorical (e.g. 'beauty', 'man'), in universal statements one cannot easily use the totalizer appropriate to continua (e.g. '*the whole* cheese', '*the whole* beauty of her face', '*the whole of* mankind', thought of metaphorically as a collection), but generally has recourse to the pseudo-totalizing *all* used for universal statements in speaking of discretes. Hence '*All cheese* is a food', '*all beauty* is perishable', '*all man* (or mankind) is mortal' are formally analogous to '*all men* are mortal'. Such universal concepts of continua may also be expressed in still other analogous ways, e.g. '*cheese* is a food', '*all the cheese* that can be thought of is a food'. If *whole*, the true totalizer of such existents as 'cheese', cannot be used to universalize them, it follows that, by analogy, the universalizing *all* is not even linguistically, let alone logically, identical with the true totalizer *all*, but is merely a transferred use of the latter.

VII. EVALUATED TOTALIZERS

We have dealt only with those totalizers which are abstract and non-evaluated, that is, pure, denoting quantity and nothing else. But abstract totalizers, like other quantifiers, may also be evaluated, that is, they may include a reference to some notion of an evaluating category, as in *complete, full, enough.*

Such terms as *full* are used so frequently that they seem to have the value of pure totalizers, but actually they are totalized terms of quality. Thus, *full* is a capacity-totalized term of quality, applying, strictly speaking, only to volumes in space.

Some of the evaluated totalizers are:

full (totalizer applying primarily to space-bounded existents, with feeling-tone of satisfaction at cessation of operation of filling; frequently transferred to other types of existents).

enough, sufficient (totalizer of norm, with feeling-tone of satisfaction at fulfilment of given requirement).

complete (structuralized totalizer, with feeling-tone of satisfaction because of attainment of quantity aspect of structure).

entire (totalizer of negated absence, with feeling-tone of satisfaction because of inability to find any part missing).

intact (totalizer of negated interference).

perfect (totalizer of negated blemish, or of negated absence, where absence is felt as blemish; cf. value quantificates, pp. 25–7).

It is worth mentioning that such terms as *all* and *whole* are not infrequently used in a secondary, evaluated sense rather than in their primary, abstract sense. In such a sentence as 'It's *all of a* mile', '*all of a* mile' really means '*more than enough to be called a* mile'; if we rephrase the sentence as 'It's *a good* mile', we get a clearer linguistic expression of the evaluative feeling-tone of *all of a*. *All of a* and *a good* are, in effect, over-graded totalizers of norm of explicitly definite type (see section IV). In such sentences as '*Whole* lands were depopulated', '*Whole* cheeses were devoured', the *whole* is far from being a pure totalizer; it has the feeling of negated absence that belongs to *entire*. Even more complex in its logical analysis is such a term as *utter* in the sentence 'She is an *utter* failure', which is a totalizer of negated absence with strong negative affect (schematically: *deplorably entire*).

VIII. MODIFIED TOTALIZERS

Pure and evaluated totalizers, like other quantifiers, may be modified, but certain types of modified quantifiers are naturally absent from the full set of totalizers. Thus, there can hardly be a graded totalizer parallel to such terms as *few*, *many*, *more*, and *most*. If we say *fuller* or *the most complete*, it is not because we naturally grade concepts of totality but merely because such evaluated totalizers as *full* and *complete* may be taken in a derived or figurative sense which allows of grading. Thus, *fuller* implies a *full* which really means *abundant*, a concept that belongs to the sphere of *much* or *many*, not to that of *all*. Again, there can hardly be a selective totalizer parallel to such terms as *some* or *any* unless we consider *all of* in '*all of* the table' (type 2) and '*all of* the tables' (type 6) as such selectives, inasmuch as they are the totalizing limits of such series as '*half* the table', '*three fourths of* the table' and '*half of* the tables', '*three fourths of* the tables' respectively.

Among the more important of the modified totalizers are: the distributive totalizers, corresponding to such terms as *one by one*, *two each*, e.g. *distributively all*, which may be rephrased in such terms as *all of one* (*set*) *by all of another* (*set*), *by totals*, *in whole sets;* the selective distributive totalizers, e.g. *all of each;* the limitative totalizers, e.g. *quite all*, *absolutely all*, '*just the whole of* it must be utilized, not merely a part'; and exclusives, e.g. 'you can buy *only the whole* set, not just one or two pieces'.

IX. NEGATED TOTALIZERS

Negated totalizers, as a rule, have the force of partials. In other words, the idea of totality is negatived or lifted, as it were, leaving the mind free to roam over the whole range of quantity lying on the minus side of totality. In English, however, these partials are not true affirmatives, but merely positives in the corresponding negative statement, i.e. '*Not everybody* came' does not mean '*Some* came', which is implied, but '*Some* did *not* come'. Logically, the negated totalizer should include the totalized negative, i.e. opposite or contrary, as a possibility, but ordinarily this interpretation is excluded and the totalized negative (contrary) is expressed by negating the corresponding unitizer or non-specifying selective. The table of examples on the next page will make this clear.

The negated totalized negative logically gives some type of partial, e.g. *not none* = *some*, 'it was*n't no*thing I got' = 'I got *some*thing', but such usages are not common in standard English. They are characteristic of Latin, however, e.g. *nonnulli* '*not none*', i.e. '*some, quite a few*'; *non nunquam* '*not never*', i.e. '*some*times'. On the other hand, when the negation is not of the totalized negative but of the statement as a whole, the net meaning is that of the contrary, i.e. a totalized affirmative; e.g. 'there was *none but* was present' = 'there was *none* who was *not* present' = '*every one* was present', '*all* were present'. Such totalizers of double negation may be called corrective totalizers, for they directly oppose a quantitative negation merely in order emphatically to affirm the notion of totality at the other extreme of the quantitative gamut. The corrective totalizer is sometimes directly expressed in English by *all*, as in 'it's *all* wheat', which has a doubly negative force, i.e. 'it's *nothing but* wheat', 'it consists of *nothing* which is *not* wheat'.

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POSITIVE TOTALIZER	NEGATED TOTALIZER	= PARTIAL	NEGATED UNITIZER; NEGATED NON-SPECIFYING SELECTIVE	= TOTALIZED NEGATIVE (CONTRARY)
all the men	*not all* the men	*some of* the men	*not one* man, *not one of* the men; *not any* man, *not a* man, *not any of* the men	*no* man, *none of* the men, *nobody*
all of it	*not all of* it	*some of* it	*not one bit of* it; *not any of* it	*none of* it
the whole table	*not the whole* table	*some of* the table, *a part of* the table	*not one part of* the table; *not any part of* the table	*no part of* the table, *none of* the table
*every*body, *every* one	*not every*body, *not every* one	*some*body, *some* one, *some*, *some* (people), *certain* ones	*not one*, *not a one*; *not any*body	*none*, *no*body
both of them	*not both of* them	*one of the two of* them	*not either* (*of the two of* them)	*neither of* them
*al*ways	*not al*ways	*some*times	*not ever*; *not* at *any* time	*never*, at *no* time
enough	*not enough*	*to some extent*	*not to any*[3] *extent*, *not any* (coll.)	*quite insufficiently*

[3] When *any* is accented. When *any* is not definitely stressed, 'not to any extent' means 'not to any considerable extent,' i.e. 'not enough to satisfy requirements.'

X. SPECIALIZED TOTALIZERS

Specialized totalizers are those in which the fundamental quantitative notion is so limited as to apply only to a particular class of existents. Thus, *the whole swarm of*, *the complete herd of*, *every one of the flock of* are specialized direct quanto-quantifiers of animal collectivities; *all three bushels of*, *a whole pint of* are specialized direct quanto-quantifiers of volume or capacity. As with general (abstract) totalizers, so with specialized ones—they may be direct or calculated, and each of these may be non-evaluated or evaluated, in turn simple or modified. Examples of such are: direct specialized totalizers, (a) non-evaluated simple: *all the acres of*; (b) non-evaluated modified: *only the total acreage of*; (c) evaluated simple: *the complete herd of*; (d) evaluated modified: *quite a full bushel of*, *an ample sufficiency of tonnage of* = *a more than sufficient weight of* (in terms of tons); calculated specialized totalizers, (a) non-evaluated simple: *the whole computed acreage of*; (b) non-evaluated modified: *absolutely all the remaining battalions of*; (c) evaluated simple: *the complete toll*[4] *of* (dead); (d) evaluated modified: *a merely sufficient quota*[5] *of* (immigrant laborers).

[4] *Toll* = counted (or computed) totality of (lost) human beings.

[5] *Quota* = allocated totality of human beings—totality of human beings assigned to some part of an implied whole.

XI. QUANTIFICATES INVOLVING TOTALIZATION

Specialized totalizers are a species of quantificates (quantified quantifiables). They consist of totalized quantificates (quantificates in which the quantifying element is the notion of totality) applied (or re-applied) for quantifying purposes. They may be called quantificate-totalizers. In them the notion of totality is used to quantify a quantitatively defined class of existents which is abstracted from the existents themselves (e.g. *flock, bushel, acre*), and the resultant term is used to quantify a member of the underlying class (e.g. *sheep, potatoes, land*). Like all other quantifiers, quantificate-totalizers answer the question 'How much (many)?' or 'To what degree?'.

We have now to take a glance at the different kinds of totalized quantificates in which the notion of totality determines a non-quantitative type of experience. The total number of possible terms of this sort is naturally immense and we need only list the types, with an example or two of each.

TOTALIZED QUANTIFICATES (not primarily totalizers)

A. Totalized quantificates which determine existents or occurrents
   1. Totalized selection quantificates (totalized selecters), e.g.: *all these, both of those, the whole of a certain*
   2. Totalized order quantificates (totalized orderers), e.g.: *'at every point* (in the system)', *throughout, the last* (= *the all-th*)
      2a. Totalized space quantificates (totalized spacers), e.g.: *everywhere* (corresponds to both *all* and *whole*), *at all places* (corresponds only to *all*), *throughout* (may be used of space-portions), *all over*
      2b. Totalized time quantificates (totalized timers), e.g.: *always* (corresponds to both *all* and *whole*), *at all times* (corresponds only to *all*), *throughout* (may be used of time-portions), *ever* (e.g. 'I am *ever* desirous of'; not to be confused with *ever* = *at any time*, e.g. 'if *ever* I am desirous of')
   3. Totalized condition quantificates (totalized conditioners), e.g.:

'*under all conditions*' (corresponds to *all*), '*whether* (he comes) *or not*' (corresponds to *both*)

4. Totalized purpose quantificates (totalized purposers), e.g.: *for all purposes, for the whole purpose, entirely in order to*
5. Totalized cause quantificates (totalized causers), e.g.: *for all reasons, each and every cause, the whole cause, completely determined* (as to cause)
6. *Totalized requirement* (*norm*) *quantificates* (totalized normers, e.g.: *corresponding to all requirements, complete* (in certain contexts, e.g. 'a *complete* solution of the difficulty')
7. Totalized manner (quality) quantificates (totalized qualifiers), e.g.: *in every way, of all kinds, 'the whole range* (*of types*)', *both sorts, entirely of a* (given) *kind, completely dark*
8. Totalized value quantificates (totalized valuers), e.g.: *perfect*

B. Totalized quantificates which are existents or occurrents

9. *Totalized existent quantificates* (totalized existentials), e.g.: *the whole world, the universe, all, everything, both hemispheres, 'every atom* (of his body)'
10. *Totalized occurrent quantificates* (totalized occurrents), e.g.: *to get completely dark, to finish* (related to both *all* and *whole*, e.g. '*to finish* the count' and '*to finish* the task'), *to pervade* (related to *whole* and *all of*, but not to *all* of discretes), *to consume, to annihilate, to reach up to, 'to embrace* (everything)' (related to cumulative totalizers like *each and every, one and all*)

It is difficult sometimes to classify actual terms involving quantity as a determinant, because there are many blended types. We have grouped manner and quality together, as it is only when specificity is actualized in an existent (e.g. 'a *wholly good* man') or in an event (e.g. 'to dance *wholly well*') that the difference between quality and manner arises. Our (*in*) *every way*, for instance, is superordinated to '*in every manner* (of happening)' and '(existent) *of every sort*', somewhat as order is superordinated to space and time. If desired, the group of totalized qualifiers may be subdivided into the two blend-groups of totalized existent-qualifiers and totalized occurrent-qualifiers. It is worth noting that what seem, from the linguistic viewpoint, to be quantifiers pure and simple are often really disguised quanto-qualifiers, e.g. 'I like *every*body', i.e. 'I like *every kind of* person', in answer to 'What sort of people do you like?'; '*all* land in this city is expensive', i.e. '*all the varieties of* land (even such as is of inferior grade)'. Observe that this

disguised totalized qualifier tends to take the form of the pseudo-totalizer of universal statements—naturally enough, when we consider the close relationship between the concepts of quality and class.

Totalized quantificates may be direct or calculated, and any of them may be modified. For the sake of schematic convenience we may list examples of totalized calculated quantificates:

TOTALIZED CALCULATED QUANTIFICATES

1. Selection: *the sum of these, 100% of a certain*
2. Order: *at every computed point* (in the system), *the last* (arrived at by successive subtraction)
   - 2a. Space: *the whole area, every accruing allotment* (of land)
   - 2b. Time: *a whole month, semester, cycle*
3. Condition: *all odds* (in its favor), *under enough conditions* (to secure his rights) (evaluated)
4. Purpose: *for all calculated purposes, every calculated goal*
5. Cause: *for all calculated reasons, altogether determinedly because*
6. Norm: *corresponding by calculation to all requirements, complete specifications*
7. Quality: *in every calculated way, entirely of a specified kind, quite black*
8. Value: *calculatedly perfect, perfect on every score* (count)
9. Existent: *all the* (*calculated*) *neurones* (calculated quanto-existents are generally reached through calculated quality)
10. Occurrent: *to finish according to schedule* (calculated quanto-occurrents are generally reached through calculated manner)

We need not go through the list of modified totalized quantificates, as they can be easily formed by determining our quantifiable categories by means of modified totalizers, e.g. *just perfect* (limit approximative-totalized value quantificate).

One may legitimately ask what difference of principle there is between certain evaluated quantifiers (e.g. *enough*, *complete*, *entire*) and certain classes of quantificates, say of norm or value, which may be used to quantify (e.g. *perfect*, *full*, *complete*). Obviously there is no hard and fast line between these classes of terms. Everything depends on whether we conceive of the emphasis as a quantitative one, the quantitative notion being somehow determined by non-quantitative determinants, or conceive of the emphasis as other than quantitative, the notion of quantity merely coming in as determinant. In *entire* we feel that the emphasis is essentially a totalizing one, with an overtone of

integration: '*nothing missing*'. In *perfect* the concept of totality is clearly subordinate to that of value, ideal. In other words, while *entire* and *perfect* are within hailing distance, *entire* faces such terms as *all, whole, total,* while *perfect* faces rather *supreme, excellent. Complete* seems to look both to *entire* and *perfect,* according to context. In such a sentence as 'This is a *complete* set of furniture' the emphasis is clearly on totality, with an overtone of either the normative or the integrative, hence it is a normative totalizer. But in 'the *complete* angler' the emphasis is not on the enumeration of qualities required for good fishing but rather on the successful pursuit of the sport by virtue of all and sundry qualities required, hence it is a totalized normer. To paraphrase, 'the set of furniture is *complete*', but 'the angler is a *finished* sportsman'. One possesses a normal totality, the other a total normality.

The touchstone to the classification of any such term in a given context is the question to which it can appropriately respond. If it responds to 'How much (many) (of) . . . . . ?' or 'To what degree . . . . . ?' it is a quantifier. If it does not, it is some other kind of determinant, which may, of course, include the notion of quantity.

Finally, we may point out that, properly speaking, such specialized totalizers as *a whole bushel of* go back to more or less hypothetical quantificates, of the class *a whole bushel* (as quantitatively determined portion of space, not yet as measure of capacity). Theoretically, every quantificate may become a specialized quantifier.

Thus, *everywhere,* a space quantificate, becomes a quantifier in such locutions as '*everywhere* in France one drinks wine', which is linguistically, rather than conceptually, distinct from 'in *the whole of* France one drinks wine'. Similarly, *the whole year* is clearly a time quantificate (specifically, a totalized timer), but in '*a whole year of* study' it is just as clearly a specialized totalizer, for it has become a measure of a time-measurable existent. '*Under enough conditions* (to secure his rights)', a norm-evaluated totalized conditioned quantificate, may be turned into '*a sufficiently conditioned number of* rights', a norm-evaluated totalized conditioned quantifier. The former term answers the question 'Under how many conditions?' or, better, 'Conditioned to what extent?' The latter answers the question 'How many rights?' Hence *a sufficiently conditioned number of,* though a very remarkable kind of quantifier, is just as truly one as *five* or *all.*

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TABLE OF TOTALIZERS

(A. V. M.)

general (abstract)	direct	non-evaluated (pure)	simple	all, whole, each, every, both; none
			modified	absolutely the whole of, distributively all; none at all
		evaluated	simple	full, complete, enough (sufficient), entire, intact, perfect
			modified	quite enough, most complete
	calculated	non-evaluated	simple	the sum of, sum total of, net total of
			modified	just the sum of
		evaluated	simple	a calculatedly sufficient amount of, netting the entire
			modified	just a calculatedly sufficient amount of, netting just enough
specialized (concrete)	direct	non-evaluated	simple	swarm, the whole acreage of
			modified	only the total acreage of
		evaluated	simple	the complete herd of
			modified	an ample sufficiency of tonnage of
	calculated	non-evaluated	simple	the whole computed acreage of
			modified	absolutely all the remaining battalions of
		evaluated	simple	the complete toll of (dead)
			modified	a merely sufficient quota of

Note: Examples are merely illustrative.

Editorial Note

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The Expression of the Ending-Point Relation in English, French, and German (1932)

EDITORIAL NOTE

The present paper is the beginning of a detailed study of the variety of ways of expressing logical relations in language. It is part of a series of studies sponsored by the International Auxiliary Language Association in the United States, Inc. The chief projects which have been begun are the 'Foundations of Language, Logical and Psychological, an Approach to the International Language Problem' and 'Comparative Studies in Selected National and International Languages'.[1] The 'Ending-Point' study furnishes material which should be useful for the proposed section on 'Fundamental Relational Notions and their Linguistic Expressions' of 'Foundations of Language' and for the proposed section on 'Formal Elements' in 'Comparative Studies'.

The outstanding features of the technique are:

1. A 'testing-frame' which may be used for the analysis of any form of expression, or implication, of a relation or combination of relations, in any language.
2. The definition of a relation by means of a 'rendering' whose essence is the naming of the relation of the second term to the first term. The rendering can be translated approximately literally and used as a test rendering in any language, e.g., the rendering of the ending-point relation as 'whose ending-point is'.
3. The use of distinctive and similar type (1) in the sample sentence, for the locution which expresses or implies the relation treated, and (2) in the testing-frame, for the words or symbols which give the meaning of such locution.

The above and other features are explained more fully at the beginning of Part II.

Here, even at the risk of repetition (see p. 30), the 'testing-frame' device for facilitating the analysis of examples (see p. 36) may be briefly described as follows. At the left of the page are entered sample sentences. To the right of the samples there are three 'testing' columns.

[1] See leaflet: 'Linguistic Research sponsored by the International Auxiliary Language Association', obtainable on request from the Association, Box 118, 525 West 120th Street, New York.

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The first one is for the subject (the logical first term[2]) of the relation, that which is oriented, called A. The third column is for the correlate (the logical second term[2]) of the relation, that to which A is related, called B. In these two columns are entered the terms of the relation in substantival form stripped of idiom and often highly generalized. The middle column is for the relation, symbolized by the entry r. An interpretation or 'rendering' of the relation, given ahead of the testing-frame, shows how the symbol r is to be read.

During the research which led to the ending-point paper a constant want was felt for a term to designate a locution or other linguistic device whose sole or principal function is to express a relation or combination of relations—a word to cover the functions served by prepositions, prepositional phrases and affixes, conjunctions, and case forms. The term 'relater' was adopted and has proved useful and convenient.

Grateful acknowledgment is made to Professors Algernon Coleman (University of Chicago) and Henri F. Muller (Columbia University) for help with different parts of the French material; to Professor Peter Hagboldt (University of Chicago), Professor Hermann J. Weigand (Yale University), Dr. Ludwig Kast and Mr. Reimar von Schaafhausen for help with different parts of the German material, and to Miss Frances Faegre for help in preparing the tables in the Appendix. To other friends and fellow-workers also we are indebted for help along the roadside, and we take this opportunity to express to them our appreciation.

There remains much to explore in the field of the ubiquitous ending-point relation. Its expressions in the realm of time have scarcely been touched upon in the present study, nor have investigations been made regarding degrees of kinship or identity of 'transitive' and 'dative' relations with the ending-poing relation, nor concerning the latter's kinship to goal, purpose, result, etc.

The hope is expressed that this monograph may prove useful in future studies of the expression of locative and other relations. If such studies could be uninterruptedly pursued, in English, French and German, by a staff of two or three research assistants guided by skilled direction, it is believed that within a couple of years there might result definitions and classifications of relations and combinations of relations, expressed or masked by ordinary linguistic forms, which are more

[2] Note that 'first term' and 'second term' have nothing to do with word-order but refer exlusively to the logical priority of the subject which is being oriented over that by reference to which its orientation takes place.

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fundamental and complete than anything which yet exists. Based upon the uncovered, classified data, it should eventually be possible (among other things) to plot out a map of the common relational concepts which pervade language, accompanied by their prepositional and conjunctional symbols in the languages of the study,—a map to serve as a guide in translation and interpretation, as a new approach to certain parts of 'general language study', and as a norm for the simplification and clarification of the prepositional and conjunctional features of an international language.

A. V. M.

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[1] Section numbers correspond to those in Table I of the Appendix ('Comparative Table of Contents of Parts I and II'). Not all classes of ending-point expressions appear in each of the three languages of the study. Hence the omission of different numbers from the contents of each language.

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PART I: DISCUSSION

Definitions

THE ENDING-POINT RELATION is the relation that exists between a movement and the point at which it ends. It may be extended to include the relation that exists between a stationary existent or an extent of space or time and that one of its extremities which is conceived as its ending-point (ending-part conceived as ending-point), as in 'England stretches from Kent *to* LAND'S END', or between such existent or extent and an outside point which is conceived as its ending-point (boundary-point conceived as ending-point), as in 'England stretches from sea *to* SEA'.

A POINT, as used technically in this study, is a covering word for any existent, point, spot, place, or area in space, or any occurrent, point, or period in time.

A POINT OF REFERENCE, as used in this study, is a convenient term for any existent by reference to which the ending-point is located, e.g., 'door' in 'He put it outside the door'.

A LOCUTION is a meaningful affix, root, word, or group of words forming a unit.

A RELATER is a locution whose sole or principal function is to express a relation or combination of relations. Relaters include prepositions, prepositional phrases and affixes, conjunctions, and case elements.

Abbreviations and Conventions

e-p 'ending-point'
sec 'section'
. . . , . . . 'so and so', 'such and such'

When in the text a rendering is given of the first term of the relation (i.e., the subject) plus the relation plus the second term, the renderings of the terms of the relation are usually printed in capital letters, and the rendering of the relation in italics, e.g., "The verb 'to enter' without explicit second term expresses A MOVEMENT *whose ending-point is* A POINT IN SOMETHING."

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The Ending-Point Relation

The ending-point relation exists between two terms when one of them is given as the ending-point of the other. Thus, in 'Our tour ended at Boston', 'Boston' is stated to be the ending-point of 'our tour.' In 'We went to Chicago', 'Chicago' is the ending-point of 'our going.'

To end at and *to* both serve to express the ending-point relation, but there is an obvious difference between them. The one asserts or predicates the relation, while the other expresses it as qualifying or restricting one of the terms of a predication. 'Our tour *ended at* Boston' asserts an ending-point relation as existing between 'our tour' and 'Boston.' 'We went *to* Chicago' asserts a going, and the fact that the ending-point of the going is Chicago is incidental to the main assertion. It will be convenient to call such locutions as *to end at* predicative and such locutions as *to* restrictive.

A proposition involving the predicative ending-point relation may be reduced to the formula: A *has as ending-point* B. When the relation is restrictive the relationship may be formulated: A, *whose ending-point is* B, or A, *having as ending-point* B. In all cases, we shall call the first term of the relation A, the second term B.

Linguistically, the relation may be expressed by an isolable locution, as is the case with 'to end at' and 'to'; or the relation may be combined with a substantial notion in a single locution. Such a case is the word *thither*, which means *having as ending-point* THAT PLACE: 'his journey thither' = 'his JOURNEY *to* THAT PLACE.'

Again, the relation may be not specifically expressed but implied by the context. This is illustrated by 'He stumbled and *fell*'. Here we presume, unless specifically told otherwise, that the ending-point of the fall was the ground. In such and similar cases an implication both of ending-point and of ending-point relation is forced by the nature of things, physical or social. But this occasional phenomenon is only of passing interest in a general discussion of the expression of a relation.

Another type of implication is of first importance, namely, the case of a given word or class of words implying a relation in a given type of context. The word 'home' always implies the ending-point relation when used with words expressing a motion, e.g., 'The journey *home*', 'He went *home*', 'Take me *home*', etc.

Several classes of locative expressions when used with words denoting a movement imply the ending-point relation in contexts where the second term responds to the question 'Whither goes the movement?'

Three classes of such words deserve special mention. One comprises locative prepositions, e.g., 'When it rained, they moved *under* the canopy'. Another class consists of elliptic locative pronouns, e.g., 'Show them *in*'. In still another class are found interrogative, indicative and relative locative pronouns, e.g., '*Where* do you think of going?' 'It takes half an hour to walk *there*', 'I'm going *where* the wild thyme grows'. (See note on 'Space-locative pronouns' at beginning of Part III.)

The study of the expression of the ending-point relation in English, French, and German necessarily includes a treatment of combinations of this relation with various locative relations, for this type of combination is quite common in those languages. Thus, English *into* combines the ending-point relation with the locative 'in' relation. *Under* in 'A mouse ran *under* the bed' combines the ending-point relation with the locative relation expressed by 'under'. The logical content of such expressions as *into*, and *under* in certain contexts, includes a substantial element which is the second term of the ending-point relation and the first term of the locative relation. This intermediary term, if expressed, would be something like 'a point' or 'a place'. It is sometimes actually expressed, as in 'They rowed to A POINT north of the pier'. *Into* (explicit locative *in* plus explicit ending-point *to*) may be paraphrased 'whose ending-point is A POINT in'; *under* (implied ending-point *to* plus explicit locative *under*), 'whose ending-point is A POINT under'.

All types of implication of ending-point relation of which examples have been given, as well as words of the 'thither' type in which the ending-point idea is essentially included, are combinations of the relation with the second term, whether explicit, as in 'He went there (to THAT PLACE)', or implicit, as in 'They went under the balcony (to A POINT under the balcony)'. The latter example is typical of one of the ordinary linguistic methods of locating an ending-point, namely, implication of the actual ending-point by explicit reference to something to which it is spatially related. In some combinations with the second term both the ending-point and the point of reference are implied. This is true of elliptic locative pronouns, e.g., in 'He went below', 'below' means 'to AN IMPLIED POINT below THE IMPLIED POINT OF REFERENCE (the point where he was standing)'.

There exist also combinations which include the first term and often other concepts as well. Such combinations are found chiefly in predicative expressions and in locutions derived from such. *To reach* is 'A MOVEMENT whose ending-point is' (FIRST TERM plus e-p relation); *to*

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embark denotes 'A MOVEMENT whose ending-point is A POINT ON SOMETHING (or SOME SHIP)' (FIRST TERM plus implied e-p relation plus IMPLIED SECOND TERM plus implied locative 'on' plus IMPLIED POINT OF REFERENCE); *a landing* expresses 'AN IMPLIED MOVEMENT whose ending-point is A POINT ON THE LAND' (IMPLIED FIRST TERM plus implied e-p relation plus IMPLIED SECOND TERM plus EXPLICIT POINT OF REFERENCE). Occasionally, the first term is implied in restrictive expressions (in cases of ellipsis of the verb), e.g., '*To* bed, you rascals', where *to* includes the idea of a movement.

A summary of the restrictive classes of locutions illustrated in the English, French and German sample sentences is given in the Appendix, Table II.

Little attention is paid in this study to the predicative expression of the ending-point, for a full understanding of such locutions would involve us in complicated questions of the expression of predication in general and of the 'reification' of relations into entities; e.g., *end*, as noun, as a 'reified' ending-point relation. As examples of the bewildering variety of possible renderings in actual speech of the predicated ending-point relation we may note the following German ways of expressing THE JOURNEY *ended at* BERLIN: 'Die Reise endete in Berlin', 'Die Reise war in Berlin beendet', 'Die Reise wurde in Berlin beendet', 'Die Reise fand ihr Ende in Berlin', 'Die Reise fand ihren Abschluss in Berlin', 'Die Reise kam zu Ende in Berlin', 'Die Reise wurde beendigt in Berlin', 'Die Reise fand ihre Beendigung in Berlin', 'Die Reise kam zu ihrem Abschluss in Berlin', 'Die Reise wurde in Berlin zu Ende gebracht', 'Die Reise wurde in Berlin zu Ende geführt', 'In Berlin war das Ende der Reise', 'In Berlin war die Reise abgeschlossen', 'Das Ende der Reise war Berlin'. There is, of course, a host of other possibilities.

English

GENERAL REMARKS

The principal device for expressing the ending-point relation in English is the relater *to*. Most locative relaters can in certain contexts imply the ending-point relation. In such cases there is no specific ending-point relater, e.g., 'He went *inside* the enclosure'. The same holds for such locutions as *here* ('He came *here*'), *upstairs* ('He went *upstairs*'), etc. Other devices will be mentioned in their turn.

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LOCUTIONS WHICH DENOTE THE ENDING-POINT RELATION EXPLICITLY OR IMPLICITLY

(1) E001[1]: The common predicative ending-point expressions in English are *to end at, to terminate at, to finish at.* There are many others, but in the case of locutions of this type it is impossible to assemble all the words of the class. We have had to be content here, and in other groups, with assembling a few representative locutions.

(2) E002–015: The usual ending-point relater is *to,* as used in 'He rode *to* Chester', 'the trip *to* Rome', 'cut *to* the bone'. *Unto* is archaic, but expresses virtually the same thing as *to*; e.g., 'My throat is cut *unto* the bone'. *Unto* may be used not only as a preposition but also as a suffix to *here* and to *there*; e.g., 'Let us hasten there*unto*'. Occasionally *to* implies a locative relation, as in 'She put the baby *to* bed', i.e. '*to a point in* bed'. Sometimes, through ellipsis of the verb, *to* may imply the first term of the ending-point relation, as in 'He asked him out *to* a round of golf', where *to* equals *to go to,* though it is probably more accurate to say that the implied *to go to* is expressed 'straddle' fashion by *asked out* and *to.*

(3) E016–017: The ending-point relation, with emphasis on the distance traversed, is expressed in English as in the following sentences: 'He went with her *as far as* the gate', 'Joan ran *all the way* to the post office', etc.

(4) E018–027: The two relaters, *into* and *onto,* combine the ending-point relation explicitly with a locative relation. 'He ran *into* the house' asserts A RUNNING *whose ending-point is* SOME POINT INSIDE THE HOUSE. 'The plaster fell *onto* the floor' asserts A FALLING *whose ending-point is* SOME POINT ON THE FLOOR. *Into* may be used in archaic style as a suffix to *there* (there*into*).

(5) E028–096: Practically all locative expressions in English may imply the ending-point relation when used with words denoting a movement. Thus, 'He went *under* the balcony' asserts A GOING *whose ending-point is* A POINT UNDER THE BALCONY. 'He ran *behind* his mother' asserts A RUNNING *which has as ending-point* A POINT BEHIND HIS MOTHER. To counteract this implication of the ending-point relation when one desires to use the locative relaters in

[1] Numbers refer to those of sample sentences in Part II.

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their primary meaning, one often has to use some expression like *along* or *about*, as in 'He went *along* under the balcony' or 'He ran *about* behind his mother'. Sometimes, however, the use of the locative relaters for the ending-point relation is ambiguous or the interpretation is dependent on the context, e.g., 'He dropped the bucket *in* the well', 'Something splashed *in* the well'.

(5.a) E028–037: A number of these locative expressions require an explicit point of reference in the second term:

at ('Up and *at* them.')

beside ('He brought up his chair *beside* her.')

east of, *west of*, *north of*, *south of*, etc. ('Afterwards we went *east of* the Alleghenies', i.e., *to a point or region east of* the Alleghenies.)

upon, which in addition to its prepositional use may in archaic style be suffixed to *there* and to *here* ('He threw it *upon* the table.' 'He placed it there*upon*.')

(*a*)*round* ('He went *around* the corner' = 'He went *to a point around* the corner.' 'It fell *around* his neck' = 'It fell *to a position around* his neck (at his neck)'. (See Note on E111, page 81.)

against ('He threw the stone *against* a tree.')

with, used as preposition and also as suffix in here*with*, there*with*.

(5.b) E038–077: A number of other locatives may be used with or without an explicit point of reference. When unexpressed, the point of reference is supplied by the context. Many such locatives function both with and without an explicit point of reference without change of form. We can say 'He went *in* the house' or 'He went *in*.' Relaters of this type are:

aboard, *about*, *above*, *across*, *along*, *alongside*, *athwart*, *before*, *behind*, *below*, *between*, *betwixt*, *beyond*, *in*, *inside*, *within*, *outside*, *without*, *on*, *over*, *under*.

In, *on*, and *under* are capable of suffixation to *here* and to *there*. *In* and *over*, and sometimes some of the others, are used to express the ending-point relation as prefixes, thus, 'the *in*rush of the waters' = THE RUSHING *whose ending-point is* A POINT IN SOMETHING; 'She *over*shot her port in the night' expresses A MOVEMENT *having as ending-point* A POINT BEYOND THE PORT. The Latin prefix *in-* in *Insert* is not to be confused with the English prefix *in-* in *inrush*. Externally the Latin *in-* is different in that it never takes the accent while the English *in-* is always accented. As to meaning, the *in-* of Latin derivatives is much more closely joined in meaning to the rest of the word, so that its funda-

mental meaning is more or less obscured in the combination. We have, therefore, not attempted to isolate the *in-* prefix of Latin derivatives.

(5.c) E078–093: Some locative expressions have different forms when used with and without an explicit point of reference. The following add an *of* when the point of reference is expressed (e.g., 'He threw them *on top of* the trunk', 'He threw them *on top*'):

on top (of), in front (of), short (of);
to the east, west, north, south (of).

One must not make the mistake of always analyzing expressions like *to the east* into the ending-point relater *to* plus a substantial *the east*, for we must bear in mind that *to the east* may be used without any implication of ending-point. The sentence 'He went to the east over the holidays' evidently expresses A MOVEMENT *whose ending-point is* THE EAST, i.e., the eastern part of the country. In the sentence 'They sailed off to the east', however, 'to the east' is no longer analyzable into ending-point relater 'to' plus substantial 'the east', but must be taken as a unit; the analysis is rather A SAIL *whose ending-point is* A PLACE TO THE EAST OF THE STARTING-POINT. 'To the east' as it occurs in this second sentence functions as a directional expression equivalent to 'in an easterly direction'. In such a sentence as 'Haiti lies to the west of Santo Domingo' *to the west of* is equivalent to *in a westerly direction from.*

The following locative expressions, many of them involving a locative relation qualified by some judgment of distance, have different forms without the use of 'of', when used with and without an explicit point of reference.

Without point of reference	*With point of reference*
He came close	close to us
He came near	near (to) us
Pull them up	up to us
Don't go far (away)	far (away) from home
Often he would go apart	apart from us
He ran away	away from us
He stepped aside	aside from us
He went back	back to them

(5.d) E094–096: Another group of locative expressions do not ordinarily take an explicit point of reference:

up front ('Take the gentleman *up front* to a better seat.')
uppermost ('The spike of my ax turned *uppermost.*')

together ('The coming *together* of a crowd takes but a few minutes.')

(7) E097–111: The idea of direction is often combined with the ending-point idea.

Some directives are used with an ending-point relater: 'I'm going *down to* Tucson', 'When are you going *up to* Wisconsin?'

There are a few directives which in certain contexts imply the ending-point relation with the point of reference unexpressed and drawn from the context, e.g., 'He set the jug *down* and went *out*.'

It is possible to analyze in ways other than shown in Part II directives which are associated with the ending-point relation. For example:

	A			r	B
	a movement	a direction	a point of reference		
I am going *down to* Tucson.	a movement	*downward from*	(. . .)	*r*	Tucson
I am going *down* town.	a movement	*downward from*	(. . .)	(*r*)	(the business section of) town
He waited for her to come *down*.	a movement	*downward from*	(. . .)	(*r*)	(. . .)
Down with your sails!	(*an action impelling a movement*)	*downward from*	(. . .)	(*r*)	(. . .)

up, down, out, over, about (in 'to turn *about*').

(8) E112–115: Certain locutions express position irrespective of context, like *upright, upside down, back to back, on one's feet, to stand, to lie, to sit,* and may express also the ending-point relation in an appropriate context, e.g., 'turning the bucket *upside down*.' We include here those which are not predicative. Samples of those which are predicative (such as *to stand, to sit, to lie*) will be found in other sections.

(10) E116–137: There are some interrogative, indicative, and relative pronouns of space-location which essentially include or which may imply the ending-point idea.

(10.a) E116–121: The explicit combinations are *whither?* (interrogative), *hither, thither, whither* (relative), *somewhither, anywhither, whithersoever, nowhither,* which may be paraphrased *having as ending-point* WHAT PLACE?, THIS PLACE, THAT PLACE, THE PLACE TO WHICH, etc. It may be noted that all of these locutions are archaic.

(10.b) E122–137: A larger number of such space locative pronouns do not essentially include the ending-point idea but may imply it when used with a word denoting a movement, e.g., 'Our journey *here*', 'He went *there*'. Such are *where?* (interrog.), *here, there, thereaways, yonder, where* (relative), *anywhere, elsewhere, everywhere, nowhere, somewhere, somewhere else, wherever, wheresoever.* The difference between this group of words and the *hither* group corresponds to that existing between locative expressions like *at, aboard,* etc. (see above, sections 5 to 5.d) and combinations like *into, onto* (see above, section 4). In the one group are expressions which may imply the ending-point relation, in the other are those in which that relation is explicit.

(11) E138–142: A few stray words which may imply the ending-point relation when used with a verb of motion constitute a group by themselves, e.g., *places, no place, some place, any place, home, abroad,* and no doubt others.

(12) E143–195: A considerable number of locutions in English combine the ending-point relation with the first term and often also with other concepts at the same time. *To come upon* (e.g., 'I *came upon* an old friend in the market place.') is such a one. Most of these refer to the ending phase of a movement and to the movement itself only by implication. Thus, 'They made port' cannot be paraphrased 'They performed A MAKING *which had as ending-point* PORT', for that would be nonsense. We are rather to see in *to make* an expression implying a movement which acts as the first term of the relation. This applies, perhaps, to all the locutions listed below:

to come up with ('He *came up with* McPherson on the third lap'). This locution implies that the point of reference of the second term is in motion.

to catch up to (with)

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to gain ('We hope *to gain* Boston by nightfall')
to hit ('Waukegan was the next town we *hit*')
to make ('They *made* port')
to join ('Try to *join* me before noon')
to rejoin
to reach ('We still hoped to *reach* our *destination*')
to draw up to ('A carriage *drew up to* the gate')
to surmount [E143–154]

to lay, to set, and *to stand* ('*Stand* it in the corner') are like the above except that they require locative relaters or locutions involving a locative relation as part of the second term. *To put* usually has this same requirement; it is also used with or without the ending-point relater *to* in different contexts. [E155–158]

Some locutions which combine the ending-point relation and the first term sometimes absorb the second term as well. We say 'He entered the house', asserting A MOVEMENT *whose ending-point is* A POINT IN THE HOUSE. If we do not express a point of reference (as in 'He entered'), the sentence is still meaningful, for *to enter* comes in this case to mean A MOVEMENT *whose ending-point is* A POINT IN SOMETHING. *To enter* may be looked upon as a combination of first term plus the ending-point relation plus 'a point in' (when used with an explicit point of reference) or as first term plus the ending-point relation plus indefinite second term (when used without an explicit point of reference). [E159–161]

To admit ('He was *admitted* by the butler') means 'to cause or permit to enter', and 'to enter', we have seen, expresses A MOVEMENT *whose ending-point is* A POINT INSIDE SOMETHING. [E162–163]

Other locutions of this type are:

to approach, to near (= *to have as ending-point* A POINT NEAR SOMETHING OR POINTS SUCCESSIVELY NEARER SOMETHING)
to board (= *to have as ending-point* A POINT ABOARD SOMETHING)
to mount (= *to have as ending-point* A POINT ON TOP OF SOMETHING)
to stop belongs here but takes locative relaters when occurring with a complement ('He *stopped*', but 'He *stopped at* the gate'.) [E164–170]

A word like *to embark* asserts A MOVEMENT *which has as ending-point* A POINT OR PLACE ABOARD SOMETHING. Thus it combines the ending-point relation with both the first and the second terms of the relation.

Other examples (not all perfectly clear cases) are: *to incise, to imbibe, to import, to immerse, to insert, to introduce, to land, to (a)light, to table, to arrive, to turn up, to deliver. To converge,* corresponding with the restrictive locative *together,* expresses MOVEMENTS *having as ending-point*

A POINT OCCUPIED BY ALL. *To return* denotes A MOVEMENT *whose ending-point is* THE PLACE FORMERLY OCCUPIED. [E171–189]

The reservation is to be made that most of these locutions (as well as *to come*, below) often are used in conjunction with ending-point relaters like *to*, *into* and others. [E159–189, 195]

To down and the slang expression *to out*, although in form non-substantial, are complete expressions (chiefly by implication) of both terms of the ending-point relation and of the relation. [E190–194]

To come, in the absence of an explicit second term, is likewise a complete expression and includes the further concept of 'direction towards'. Often, if not always, it asserts A (HITHERWARD) MOVEMENT *whose ending point is* AN INDEFINITE POINT; thus, 'He *came* an hour ago, but would not wait'. [E195]

French

GENERAL REMARKS

In French the relaters which most commonly express the ending-point relation are *à* and *jusque*. But *à*, like *dans*, *y*, *là*, may also function as a locative: 'Il vient à Paris', but also 'Il demeure à Paris'. Context determines whether *à* is to be interpreted as expressing the ending-point relation or a locative relation. The general rule is that with a first term denoting a linear movement *à* is usually to be interpreted as ending-point: 'Tout chemin mène à Rome'. On the other hand, with a first term denoting a non-linear movement or a stationary notion the relater is usually interpreted as simply locative. Thus, 'Ils dansent *au* centre de la salle' would be interpreted as 'They dance *in* the center of the room'.

To say 'They dance *to* the center of the room' one employs the word *jusque* ('Ils dansent *jusqu'a*u centre de la salle'.) This word *jusque* serves ordinarily to emphasize the distance traversed and corresponds to such English expressions as *all the way to* and *as far as* (also German *bis*), but is quite often used with French locative locutions to obviate ambiguity as to the ending-point relation: 'Ils marchent *jusque* devant le palais'. One uses *jusque* practically always when the first term is a non-moving entity, as 'Le chemin va *jusqu'à* Toulouse', 'La forêt s'étend *jusqu'à* la mer'.

The expressions of action and the direction or ending-point of action are frequently crowded into the French verb, while in English and German the tendency is rather to use a verb with a broad meaning and a

preposition or adverb to complete the idea of direction or ending-point. Thus, Fr. '*accoster* le navire' = Eng. '*to come alongside* the ship', Ger. '*sich langseit* dem Dampfer *legen*'; Fr. *descendre* = Eng. *to come down*, Ger. *herunterkommen*.

LOCUTIONS WHICH DENOTE THE ENDING-POINT RELATION EXPLICITLY OR IMPLICITLY

(1) F001: French has the predicative ending-point expressions *finir à* and *terminer à*.

(2) F002–010: For *à* and *jusque*, the usual ending-point relaters, see above under General Remarks.

(5) F011–041: In French, as in English, locative expressions, when used with words of motion, may imply the ending-point relation. Some require an explicit point of reference and others may be used with or without one.

(5.a) F011–018: Relaters requiring an explicit point of reference: *hors de, chez, dans, en, sous, sur, contre, parmi, entre.*

(5.c) F019–041: Relaters not requiring an explicit point of reference, but capable of taking one; they modify their form by the addition of *de* when so used ('Il le met *au côté*, but '*au côté* du chemin').

(au, en) deça, (au, en) delà, (au, en) dehors,
(au, en) dedans, (au, en) dessous, (au, en) dessus,
autour, (au, en) devant, derrière, (au, en) haut,
à la tête, au côté, au pied, alentour.

Of the above, *devant, dessous, dessus, dedans, contre* may be suffixed to *là-* and to *ci-*; e.g., 'Il est allé *là-dedans*'.

(6) F042–066: There are a number of prefixes of somewhat general meaning which sometimes express the ending-point relation.[2] Most of them are of variable form because they assimilate phonetically to the following element.

[2] The reader will remember that *to arrive, to approach, to import* and others were treated in the discussion of English locutions as units. These English words are etymologically the same as French *arriver, approcher, importer*, but present day English speech is not aware of the components as is French. The reason is obvious: the Frenchman feels that *arriver* consists of *à* + *rive* + verb-ending *-er*, *approcher* of *à* + *proche* + *-er*, *importer* of *en* + *porter*. In English the parts of the words are meaningless and so the word is taken as a whole and not as a combination of separate parts (except in etymology).

ad-, in *attabler, arriver, approcher, admettre.*
en-, in *emballer, enchaîner.*
in-, in *insérer, importer.*
inter-, in *interposer, entremêler.*
outre-, in *outrepasser.*
trans-, in *transvaser, transporter.*

The relation of the prefix to the stem to which it is attached varies. This will become evident if we roughly paraphrase some of the forms.

approcher: mettre quelque chose *proche à.*
attabler: mettre *à table.*
emballer: mettre *dans* une *balle.*
importer: porter dans.
transvaser: placer *dans une autre vase.*
transporter: porter dans un autre endroit.

That is, in *attabler, emballer, transvaser,* the stem represents the point of reference of the second term of the relation. In *importer* and *transporter,* the stem represents the first term of the relation. In *approcher,* the stem represents a locative relation to the point of reference of the second term. *Approcher* would be paraphrased: TO BRING ABOUT A MOVEMENT *whose ending-point is* A POINT NEAR . . . Words composed with prefixes which imply the ending-point relation, if analyzed as a whole, may be classed as combinations of the relation with the first term (see below, section 12).

(8) F067–068: French has a number of special expressions of position which may imply the ending-point relation, as in 'Il se met *debout*'. 'Allons, *debout,* il est déjà grand jour' = 'Come, get *up* (*into an upright position*), it is broad daylight.' The close logical relation between such terms as *upright* and *to stand* is indicated by such facts as that French can hardly express the idea of *standing* except by predicating adverbial terms for *uprightness: être debout* = *to stand.*

(10.b) F069–079: In French all interrogative, indicative and relative pronouns of space location may imply the ending-point relation without change of form: 'Il est *là*' and 'Je vais *là*,' 'J'*y* étais et j'*y* retournerai.' Locutions of this type are:

Où? (interrog.), *ici* (*ci-*), *là, y,*
là-bas, céans, léans (little used nowadays),
où (relative), *quelque part, nulle part, partout, autre part, ailleurs,* and others.

Note that *là* and *ci-* (for *ici*) can be used with suffixed *devant, dessous, dessus, dedans, contre* (e.g., 'Il est entré *là-dedans*').

(12) F080–090: French has a considerable number of locutions which combine the ending-point relation with the first term and often also with other concepts, e.g., *rejoindre*, *atteindre*, and *se rapprocher de*. The last two involve, however, the prefix *ad-* discussed above in section 6. All the samples with prefixes in Part II (see page 51, section 6) combine the ending-point relation with the first term (*assiéger*, *atteindre*); many express or imply in addition a locative idea (*approcher*, *interpoler*, *assaut*); and some include also a point of reference and thus are combinations of the ending-point relation with both the first and second terms (*attabler*, *encadrer*, *transvaser*).

Entrer and *parvenir* combine the ending-point relation with both the first and second terms. They may be paraphrased A MOVEMENT *whose ending-point is* A POINT IN SOMETHING and A MOVEMENT *whose ending-point is* SOME POINT respectively. To introduce an explicit point of reference for the second term, one must employ a locative relater or a locution involving a locative relation. Thus, 'Il *entre*', 'Il *entre dans* la salle', 'Il *y entre*', 'Il *est parvenu*', 'Il *est parvenu à* la ville', 'Il *y est parvenu*'. *Venir* might also be considered a case of the combination of the ending-point relation with both the first and second terms.

S'arrêter is a locution like English *to stop, to arrive,* which, referring to the ending phase of a movement, implies the movement which is the first term of the relation (cf. E170, G115, G116).

German

GENERAL REMARKS

German makes a careful distinction between locative relations and the ending-point relation. In addition to a distinctive ending-point relater, *zu*, it has a device whereby the ending-point relation is unambiguously brought out when used with nine of the principal locative relaters. We refer to the rule that *an*, *auf*, *hinter*, *in*, *neben*, *über*, *unter*, *vor*, and *zwischen* govern the accusative case when their meaning includes the ending-point idea, whereas they govern the dative when their meaning is purely locative. Further, the distinction between 'Whither?' and 'Where?' is carried out fully with interrogative, indicative and relative pronouns of space location (see sections 9, 10.a). The differentiation between expressions which respond to 'Where?' and 'Whither?' is, however, not complete. It cannot be made in cases like 'Er setzt sich *gegenüber* dem Alten', as opposed to 'Er sitzt *gegenüber* dem Alten.'

The accusative case after *an*, *auf*, etc., is considered to denote explicitly the ending-point relation because another case (the dative) is used

after the same prepositions when there is no question of ending-point. For this reason, in the analyses of ending-point phrases composed with *an, auf*, etc., the ending-point relater is shown without parentheses (see Part II, Ger., sec. 5.a-1). Contrariwise, a case form which is not distinctive for the ending-point relation is not considered to be an explicit denotation of that relation, and in the analyses of ending-point phrases composed with prepositions (other than *zu* and *nach*) which govern but one case, irrespective of the ending-point idea, the ending-point relater is shown within parentheses (see Part II, Ger., sec. 5.a-3).

Of special interest in German is the use of *her* and *hin* as expressions of the ending-point relation. The meanings of *her* and *hin* depend upon context. It is beyond the scope of this discussion to touch upon all their meanings, but mention should be made of such as bear upon the ending-point relation. Never forgetting that whatever is said below is in reference to *her* and *hin* only in the kinds of contexts illustrated, their meanings as ending-point expressions may be summarized as follows:

1. 'whose e-p is': *her* and *hin* as e-p relaters, (a) *her* when suffixed to 'hier', and *hin* when used in connection with 'wo' ('irgendwo', 'anderswo', etc.), 'hier', 'da', 'dort', e.g., 'Hier*her* kommen nur Reiche', 'Bitte sagen Sie mir wo*hin* dieser Zug fährt', 'Wo kamm der Waidmann *hin?*' (see Ger., sec. 10.a); (b) in combinations which express a direction when the specifically directive idea resides entirely in the other element of the combination, as in '*Her*AUS mit eurem Flederwisch!' where *her* merely performs the function of an e-p relater between the (implied) movement of the sword and the movement's ending-point expressed in terms of direction by AUS: 'A POINT OUTWARD FROM . . . (the scabbard)'.

2. 'whose e-p, in direction of (away from) speaker, is': *her* and *hin* as e-p directives: (a) as prefixes in combinations in which both elements express a direction, *her* or *hin* expressing a direction toward or away from speaker and the other element expressing a specific direction away from the starting-point, e.g., 'Die Menge quoll *her*AUS (*hin*AUS)': *whose e-p, in direction of (away from) speaker, is* A POINT OUTWARD FROM . . . (THE STARTING-POINT); (b) *her* and *hin* as prefixes in combinations in which they are the only expression of direction, e.g., 'Da kommst du schon *her*-VORgehüpft' *whose e-p, in direction of speaker, is* A POINT BEFORE . . . (THE STARTING POINT). (See Ger., sec. 7.)

3. 'whose e-p is this (that) place': *her* and *hin* as e-p indicative pronouns, when used alone or in connection with *an, bei, ein (in), zu*, etc., or with a verb-stem which expresses a motion, e.g., 'Sie kam *her* (*to this place*)', 'die *Her*fahrt, *Hin*fahrt (the journey *to this, that, place*)', 'Sie

kam *herzu*, *hinzu* (*to this, that place, object, person*)'. In the last two examples 'zu' merely repeats and emphasizes the e-p idea already essentially embodied in *her* or *hin* alongside of the substantial idea of place or the like. (See Ger., sec. 9.)

Her and *hin* alone and in the kinds of combinations mentioned above are never used as mere locatives. For this reason their meanings (in such contexts as illustrated) are analysed as essentially including the e-p idea and not merely as implying it.

LOCUTIONS WHICH DENOTE THE ENDING-POINT RELATION EXPLICITLY OR IMPLICITLY

(1) G001: Predication of the ending-point relation has various forms in German, e.g., 'Die Reise *findet in* der Stadt Berlin *ihren Abschluss.*' 'In Berlin *wird* die Reise *zu Ende gebracht.*' 'Die Reise *kommt in* Berlin *zu Ende.*' (See page 14).

(2) G002–008: *Zu* is the usual ending-point relater (e.g., 'Er geht *zu*r Schule'). *Nach* sometimes has the same function, particularly with place names ('Er will *nach* Heidelberg', 'Er fährt *nach* Amerika'). Both of these relaters may be used as prepositions or suffixed to *da* and *wo*. However, *wozu* and *dazu* generally mean 'for what reason?' and 'for that reason' respectively and rarely have their literal meaning. *Her*, when suffixed to *hier-*, and *hin*, when suffixed to or following *wo*, *da*, *dort* and the like, also serve as ending-point relaters, as already mentioned. (See above, General Remarks, and below, section 10.a.)

(3) G009–012: *Bis* sometimes functions as a kind of ending-point relater. In meaning it is much the same as French *jusque* (or Latin *usque* = *all the way to, as far as*), but the German word can be used independently, e.g., 'Ich fahre *bis* Düsseldorf mit'. It is not an ending-point relater in the same sense as *zu* is one, but it does involve the ending-point relation.

Bis used in conjunction with another relater may serve merely to obviate a possible ambiguity, e.g., 'Der Adler flog *bis über* den Hof' means 'The eagle flew *to a point over*', where 'Der Adler flog *über* den Hof' would mean 'The eagle flew *over* (*and past*) the yard'.

(5) G013–063: Locative expressions which may imply ending-point relation.

(5.a-1) G013–032: *An*, *auf*, *hinter*, *in*, *neben*, *über*, *unter*, *vor* and *zwischen* take the dative in the simple locative meaning, the

accusative to indicate the ending-point relation. 'Ich gehe *an* deine Tür' (acc.) is thus clearly distinguished from 'Ich stehe *an* deiner Tür' (dat.)—so much so that it is common in German to leave the first term of the relation unexpressed, e.g., 'Ich will *unter* den Baum (acc.), denn es ist hier zu heiss!'

(5.a-2) G033–049: These relaters may be suffixed to *wo-* and to *da-* (*worauf?*, *darauf*), in which case the distinguishing mark between the locative and the ending-point plus locative use is lost, for *da-* and *wo-* do not show case: 'Er stellt sich *dazwischen*', 'Er steht *dazwischen*'.

(5.a-3) G050–060: There are quite a number of locative relaters, construed with the genitive, dative, or accusative case, which show no distinction between the purely locative and the ending-point relation plus locative uses: 'Er setzt sich *links* des Baumes', 'Er sitzt *links* des Baumes'. These locatives are not used as frequently as their number might suggest. They are here listed alphabetically and not according to importance:

abseits, abwärts, aufwärts, ausserhalb, beiderseits, diesseits, gegenwärts, halbwegs, herseits, herwärts, hinseits, hinterhalb, hinterrücks, hinterwärts, hinwärts, hüben und drüben, inmitten, innerhalb, inwärts, jenseits, längs, links, niederwärts, nördlich, nordwärts, oberhalb, oberwärts, osten, östlich, ostwärts, rechts, rings, ringsum, rittlings, rückwärts, seitab, seitwärts, südlich, südwärts, unfern, unterhalb, unterwärts, unweit, vorwärts, westlich, westwärts, generally governing the genitive.

bei, benebst, entgegen, gegenüber, längs(t), mit, nächst, nebst, generally governing the dative.

durch, entlang, gegen, um, wider, governing the accusative.

Of these, *bei, mit, durch, gegen, um, wider*, and occasionally some of the others, can be suffixed to *wo* and *da*.

(5.d) G061–063: *Beiseite* and *zusammen* (= *at* or *to a place occupied by all*) never take an explicit point of reference. They may express either the ending-point relation plus the second term or a locative relation plus the second term. 'Sie stand *beiseite* mich erwartend,' 'Sie nahm mich *beiseite* und flüsterte mir etwas ins Ohr.' '*Zusammen*bitten' = 'to invite *together*, i.e., *to a place occupied by all*.'

(6) Relaters of the *an, auf, hinter* group, *zu, wider, gegen, um*, and some others are used as prefixes, but as such do not often retain their literal meaning. *In-*, for example, in the

form *ein-* forms the compound *eingehen*, which means not 'to *go in*' but 'to shrink'; *untergehen* means 'to succumb'; *Widerstand* means 'opposition'. On the other hand, there are compounds like *zugehen* 'to approach', *auftischen* 'to set upon the table', *umlegen* 'to surround', which retain the literal meaning of the relaters. *Gegenüber* and *bei* as prefixes tend to retain their literal meaning ('*Gegenüberstellung*' = 'placing *opposite*', '*bei*spannen' = 'to hitch *next to* something'). Samples of this type of composition are given in Part II, section 12, where they are analyzed as a whole as being representative of combinations of the ending-point relation with the first term.

(7) G064–076: *Her* and *hin* plus *-ab*, *-auf*, *-aus*, *-über*, *-unter*; *her-* plus *-vor*, form directives which essentially include the ending-point relation (cf. Eng. *up*, *down*, *out*): 'Warte ein bischen, ich komme bald *hinaus*'. (See above, General Remarks.) *Herum* is used both as a locative non-directive ('Die Kinder stehen um den Tisch *herum*') and as an e-p directive ('Er kehrte die Münze *herum*'). In the latter case it can be rendered '*whose e-p is* A REVERSE POSITION (at . . .)'. *Zurück*, also, is a directive which may imply the ending-point relation; e.g., 'Er ist schon *zurück*'.

(8) G077–079: German, like English and French, can combine in one locution the special expression of a position and an implication of the ending-point relation: 'Er stellte sich *auf den Kopf*.'

(9) G080–094: German has words which express an indicated substantial in combination with the ending-point idea, namely, in certain contexts, *her* and *hin* alone or plus *-an*, *-bei*, *-ein* (*-in*), *-vor*, *-zu*, *-zwischen* or plus a stem which expresses a motion. These indicative ending-point pronouns (akin to English *hither* and *thither*, and to ending-point *here* and *there*) may refer (1) to a location: 'Wie weit ist's *hin*? (How far is it *there? to that place?*),' 'die *Her*fahrt (a trip *to this place*)'; (2) to an object: 'Er sah einen Feigenbaum an dem Wege, und ging *hinzu* (He saw a fig tree near the road, and went *to it*)'; or (3) to a person: 'Samed zittert *herzu*, und umarmt ihn (Samed tremblingly goes *to the man* [implied by context] and embraces him)'. 'Er geht *hinzwischen*' = 'He goes *to a point between the (indicated)* x *and* x_1. 'Er geht *hinzu*' = 'He goes *to the (indicated)* x (supplied by context)'.

(10.a) G095–108: *Her* suffixed to *hier*, and *hin* suffixed to or following *wo*, *irgendwo*, *nirgend(s)wo*, etc., *hier*, *da*, *dort*, *überall*, form interrogative, indicative and relative pronouns of space-location in

combination with the ending-point relation. In these combinations it is *her* or *hin* which expresses merely the ending-point relation (contrast section 9 above) and *wo*, *hier*, *dort*, etc., which constitute the explicit second term. 'Komme *hierher*,' 'Gehe *dahin*, *dorthin*, *überallhin*, *nirgendswohin*.'

It is interesting to note that *her*, when in combination with *hier*, like *hin* serves as an e-p relater, but when in combination with *da*, *dort*, *wo*, etc., in sharp contrast to *hin*, serves as a starting-point relater. And yet 'Gehe *daherein*' expresses a movement *whose ending-point is a point in there.*

Such an expression as *dahinein* is placed in this section, *hin* being interpreted as being merely an e-p relater, whereas *hinein* belongs to section 9, where, in the absence of any such pronoun as *da*, *hin* is considered to be an e-p pronoun.

(11) G109–111: *Heim*, when used with a word which denotes or implies movement, may imply the ending-point relation, e.g., '*Heim*weg', 'Schön ist der *Heim*gang und lieb das Heimsein.'

(12) G112–138: A number of locutions in German combine the ending-point relation with an implied first term. Many of these also include an implied, and some an expressed, point of reference. Many of them include also a locative relation. 'Er *näherte sich*' asserts A MOVEMENT *which has as ending-point* POINTS SUCCESSIVELY NEARER SOMETHING. 'Dann *blieb* er *stehen*' asserts AN IMPLIED MOVEMENT *whose ending-point is* SOME POINT. *Auftischen* = A MOVING *whose ending-point is* A POINT ON THE TABLE.

PART II: SAMPLE SENTENCES

Explanatory Remarks

Sentences, each containing some expression of the ending-point relation, accompanied by an analysis of such expression, will serve to illustrate, clarify, and substantiate the remarks made in the discussion in Part I. The samples for each language may be related to the discussion by means of the marginal numbers, which correspond with the numbers occurring in the discussion.

Samples are entered in column S, and a schematic analysis of each sample or the pertinent part thereof is given in columns A, r, B. Column A shows the first term of the relation. Column r gives the relation, i.e., the ending-point relation, which is to be read 'has as ending-point' (-r) or 'whose ending-point is' (r)[1]. Column B gives the second term of the relation. Italics are used in the sample (column S) to show the linguistic element which expresses the relation, either term of the relation, part of such a term, or any combination of these and in columns A, r, B to show the corresponding elements of meaning.

Examples:

S	A	r	B
1. The tour *ended at* Boston.	a tour	$-r$[2]	Boston
2. He rode *to* Chester.	a riding	r[3]	Chester
3. The journey *hither*.	a journey	r	*this place*
4. A trip *into* the mountains.	a trip	r	*a p*[4] *in* the mountains

If more than one linguistic element connotes the ending-point relation, only one of them is treated at once, and italics in columns A, r, B show only the meaning of the element being treated: indeed, convenience may require that the extra element be ignored. Thus, in the sentence 'The maid admitted him into the front parlor', the ending-point relation

[1] For the difference between these two renderings see pp. 12–14.

[2] Read: 'has as ending-point'.

[3] Read: 'whose ending-point is' ('whose ending-points are') or 'having as ending-point'. In the analyzed samples the former reading is assumed.

[4] 'p' is to be read 'point' or any convenient synonym; often 'place'.

is expressed not only in 'into', but also in 'admitted'; for 'to admit' means 'to cause or permit to enter', and 'to enter' expresses A MOVEMENT *whose ending-point is* A POINT INSIDE SOMETHING. When we treat the word 'admitted', the analysis is:

	S	A	r	B
5.	The maid *admitted* him into the front parlor	*an induced movement*	*r*	*a p inside* the front parlor

When we treat 'into', the analysis becomes:

	S	A	r	B
6.	The maid admitted him *into* the front parlor	an induced movement	*r*	*a p inside* the front parlor

Notions implied but unexpressed are included in the entries of the analyses in columns A, r, B, being either placed in parentheses or represented by some special means. An implied 'point' which is the logical second term of the ending-point relation and first term of some other relation is represented by the abbreviation *p* (see above, examples 4, 5, 6, and below, examples 8, 9, 10). An implied ending-point or point of reference is symbolized by three dots (small dots corresponding to ordinary type, . . . , and fat dots to italics, . . .) which can be read 'so and so' (see example 8). If the implication is part of the linguistic element being treated, the entry is also italicized. Thus:

	S	A	r	B
7.	It is two miles *to* Dover.	(an extent of space measuring) two miles[5]	*r*	Dover
8.	Go *behind* and look for it.	a movement	(*r*)	*a p behind . . .*
9.	He went *in* there.	a movement	(*r*)	*a p in* that place
10.	She put the baby *to* bed.	a moving	*r*	*a p* (*in*) bed

Pronouns are entered in column B in the nominative when they are without context in that column (examples 11 and 12). They are entered in their ordinary grammatical form when they are part of a phrase all of which is in column B (example 13). Thus:

[5] The ending-point relation is used not only for movement but also in cases where there is no movement and consequently no ending at the point in question. This is true in measures of space, where we make the transfer, from expressions of limited movement, of seeing one extremity of the extent as the starting-point, the other as the ending-point, of a hypothetical movement. A somewhat similar transfer takes place with notions of looking, pointing, facing, directing. (See Definitions, p. 11.)

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S	A	r	B
11. Up and *at* them.	(*an aggressive movement*)	(*r*)	they
12. Als hätten ..... mehr denn hundert Festen ihm Die Schlüssel ihrer Tore *dargesandt.* /Broxtermann, in GRIMM	*specifically directed actions impelling movements*	(*r*)	he
13. Come *close by* me, and tell me what is the matter.	a movement	(*r*)	*a p close to* me

It is to be noted that the word *place* is used as a general expression of the substantial element in interrogative, indicative, and relative locative pronouns such as *where?*, *here*, *wherever* (examples 3, 9).

It is further to be noted that 'a movement' is used in Column A as a general term usually preferred to the various specific types of intransitive movements.

The formula 'a moving' is often used for one type of transitive verb which appears in the sample sentences, namely, a verb which expresses a causative transitive motion initiated by one subject (the agent) and implies a caused intransitive motion ('a movement') by another subject, the two motions being simultaneous, pursuing the same path and having the same ending-point, or ending-points so nearly the same that they can be described in broad outline by identical language. This kind of verb may conveniently be referred to as a verb of two motions with one path and one ending-point. To illustrate, 'to lay' in the sentence 'Sarah laid her pencil on the desk' expresses a transitive motion by Sarah and implies a simultaneous parallel intransitive motion by the pencil. The latter is caused by the former, and of both can be said: 'whose ending-point is a point over the desk'. Verbs of this class include (in most contexts): *put*, *lay* ('Lay it down'), *set* ('Set it on the table'), *stand* ('Stand him in the corner'), *pull*, *draw* ('She drew the curtain'), *drag*, *hand*, *carry*, *bring*, *lead*, *paste*. Every durative causative verb based on an active intransitive belongs to the category described.

Another formula is used for a different type of transitive verb, namely, the verb which expresses or implies two motions with different paths and ending-points, one of the motions in some way causing the other. The most general formula appropriate for such a verb is 'an action causing a movement'. Instead of 'causing', a somewhat more special word may be used, such as 'impelling' or 'compelling', where the performance of the intransitive movement is not voluntary, or 'inducing' where such performance is voluntary.

Examples:

S	A	r	B
14. He *dropped* the bucket in the well.	*an action impelling a movement*	(r)	a p in the well
15. *Down* with your sails.	(*an action impelling a movement*)	(*r*)	*a p downward from . . .*
16. He *threw* me a ball.	*an action (a moving) impel- a movement*	(r)	I
17. He *shooed* the cat out of the house.	*an action compelling a movement*	(r)	a p outside the house
18. Advertised by two Symerons, whom he *sent* before.	*an action (an order) compelling a movement*	(r)	a p before . . .
19. The butler *admitted* the visitor into the parlor.	*an action inducing a movement.*	*r*	*a p in . . .*, in the parlor
20. We *import* large quantities of coffee every year.	*actions (contracts or orders) inducing movings*	*r*	*pp in one's country*

The caused movement may accompany or follow the causative action, or may in part accompany and in part follow, as illustrated in the above examples. Thus:

Analysis of transitive verb.	Time relation of caused movement to causative action.
14. An action impelling a movement.	succeeding.
15. An action impelling a movement.	simultaneous.
16. An action (a moving) impelling a movement.	simultaneous and succeeding.
17. An action compelling a movement.	simultaneous and succeeding.

18. An action (an order) compelling a movement.	succeeding.
19. An action inducing a movement.	simultaneous and succeeding.
20. Actions (contracts or orders) inducing movings.	simultaneous and succeeding, if causative action be considered as durative, e.g., a standing contract between importer and exporter; *or* succeeding, if causative action be considered as non-durative, e.g., an order once given by importer and accepted by exporter.

With a verb of two motions with different paths the ending-point of the initial action (whether physical or volitive) is not ordinarily expressed but only that of the caused movement. For example: 'Sarah poured water into the jug' pictures AN ACTION (by Sarah) IMPELLING A MOVEMENT (by the water) *whose ending-point is* POINTS IN THE JUG. The unexpressed ending-point of the causative action is a point at which the vessel of supply, from which Sarah wishes to cause water to flow, reaches a position which impels the contained water to pour forth. In throwing a ball (No. 16), the impelling action of the hand ends when the ball leaves it. But the impelled movement of the ball continues, and it is that, and not the action of the hand, whose ending-point is 'I'. In scaring away a cat (No. 17), the man may not have touched the cat, but may have compelled her by chasing and shouting to run to a point outside of the house while he remained within. In the case of an admitting (No. 19), the butler may have remained in the hall and merely opened the parlor door and bowed to the visitor to enter, in which case the ending-point of the butler's action was a point in the hall, whereas that of the visitor's was a point in the parlor.

It now remains to indicate the sources for material used in this study. In general, we have sought our samples in the standard dictionaries of the languages, especially in dictionaries which quote known authors and general usage. A few samples are taken from other book sources and a number are purely *ad hoc*. The source, if any, is given after each sample. The following abbreviations are employed:

NED A New English Dictionary on Historical Principles; Oxford, Clarendon, 1884–1908.

Littré E. Littré, Dictionnaire de la Langue Française; Paris, Hachette, 1885–1889.

Grimm Jacob and Wilhelm Grimm, Deutsches Wörterbuch; Leipzig, S. Hirzel, 1854-

Sanders Sanders, Wörterbuch der Deutschen Sprache; Leipzig, Otto Wigand, 1876.

Muret-Sanders Muret-Sanders, Encyclopaedic English-German and German-English Dictionary; Berlin, Langenscheidtsche Verlags-Buchhandlung, 1891–1901.

Curme Curme, A Grammar of the German Language; New York, The Macmillan Company, 1922.

Sentences with Analyses in Testing-Frame

Some of the rubrics at the heads of sections, in order to be complete, should be supplemented by the words 'and which in the given context imply (do imply, do express) the ending-point relation'. To avoid cumbersomeness such a phrase has been omitted. The reader is asked to supply it where needed.

abbreviations and conventions

e-p 'ending-point'.

fig. 'figurative'.

a movement 'an intransitive movement'.

a moving 'a transitive movement'.

n 'Note'. A raised n indicates that there is a note in Part III.

p 'point', 'place', or any convenient synonym. p represents an implied 'point' which is the logical second term of the relation being treated. (See Definitions, page 11.)

pp 'points', 'places', 'successive points, places'.

P 'position'.

PP 'positions', 'successive positions'.

-r 'has as ending-point'. Used only in predicative expressions of the e-p relation (section 1 of each language).

r 'whose ending-point is' ('whose ending-points are') or 'having as ending-point'.

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. . . 'so and so', 'such and such'. Term to be supplied from context. Three dots represent an implied second term of the e-p relation or an implied 'point of reference' (see Definitions, page 11).

. . . Large dots represent italicized dots, with same interpretation as small dots. Large dots form part of the interpretation of the locution which is italicized in the sample.

x represents an expressed second term or point of reference.

..... indicate an omission.

SAMPLES OF THE EXPRESSION OF THE ENDING-POINT RELATION IN ENGLISH

S Sample Sentence	A First term of relation	r Relation	B Second term of relation
(1) *Predicative e-p expression.*			
E001 The journey *ended at* Chicago.	a journey	-*r*	Chicago
(2) *Usual e-p relaters, occasionally with implication of additional concepts.*			
E002 He rode *to* Chester.	a movement	*r*	Chester
E003 She threw[N] crumbs *to*[N] the birds.	a moving impelling a movement	*r*	the birds
E004 *To* bed[N], you rascals!	(*a movement*)	*r*	(*a p in*) bed
E005 He pointed *to* a clump of trees. /Blackw. Mag., in NED	a line of indication	*r*	a clump of trees
E006 He went *to* his death[N].	a movement	*r*	(the p at which) his death (occurred)
E007 He asked him out *to*[N] a round of golf.	(*a movement*)	*r*	(the p at which they will play) a round of golf
E008 She has been *to* confession[N].	(a movement)	*r*	(the p at which one makes one's) confession
E009 Which is the road *to* Joliet?	a road	*r*	Joliet
E010 It is eleven miles *to* Witney. /NED	(an extent of space)	*r*	Witney
E011 Protestant *to* the backbone[N] /Fraser's Mag., in NED (fig.)	(an extent)	*r*	the backbone
E012 You should know what it is to wear[N] iron *to* your bone! /Anderson, *Gods of the Lightning*, p. 35	a wearing (thought of as having extent)	*r*	your bone

S	A	r	B
E013 Then speed we ..... Hermes the Flitter, to go *Unto* the isle Ogygia. /Morris, in NED	a movement	*r*	the isle Ogygia
E013a Majestic men who looked *unto* the skies. /Aird, in NED	lines of sight	*r*	the skies
E014 My throat is cut^{N} *unto* the bone. /Wordsw., in NED	a cutting (or: an extent of cutting)	*r*	the bone
E014a The hope thus to press thee *Unto* my fond bosom. /R. Allan, in NED	a pressing	*r*	my fond bosom
E015 When God had brought me there*unto*^{N}. /Myers, in NED under 'thereunto'	a moving	*r*	that place
(3) *E-p relaters, with emphasis on distance traversed.*			
E016 If you walk *as far as* Mt. Hermon, you'll be tired out.	a movement	*r*	Mt. Hermon
E017 The new state road is laid *all the way to* Pocantico.	an extent	*r*	Pocantico
(4) *E-p relaters in combination with locative relaters.*			
E018 Come *into* the garden, Maud. /Tennyson, in NED	a movement	*r*	*a p in* the garden
E019 At dusk he harries the Abazai—at dawn he is *into*^{N} Bonair. /Kipling, in NED	(*a movement*)	*r*	*a p in* Bonair
E020 These smaller off-drains should be flushed *into* the main street drain. /Kendall Merc., in NED	an action impelling a movement	*r*	*a p in* the main street drain
E021 The child walked out *into*^{N} the street.	a movement	*r*	*a p in* the street
E022 He examined *into* every fissure in the crags. /J. F. Cooper, in NED	a searching	*r*	*pp in* every fissure
E023 He dropped the bucket *into*^{N} the well.	an action impelling a movement	*r*	*a p in* the well
E024 The poor comedian runs[1] *into*^{N} a tree.	a movement	*r*	*a p against* a tree
E025 And the black blood flowed there*into*. /Morris, in NED under 'thereinto'	a flowing	*r*	*pp in* that place

[1] 'Into' is here used figuratively.

S	A	r	B
E026 A bit of ceiling dropped *onto* the floor.	a movement	*r a p on* the floor	
E027 It rolled *onto* the sidewalk.	a rolling	*r a p on* the sidewalk	
(5) *Relational locative expressions which may imply ending-point relation.*			
(5.a) *Those which require an explicit point of reference.*			
E028 Up and *at*^{N} them.	(*an aggressive movement*)	(*r*) *pp in contact with* them	
E029 I looked *at*^{N} him.	a directed line of sight	(*r*) he	
E030 A large loligo.....had thrown itself high and dry *upon* the beach. /H. Miller, in NED	a movement	(*r*) *a p on* the beach	
E031 We went *round* the corner. /Dickens.	a movement	(*r*) *a p around* the corner	
E032 My mother put her arms *around* my neck. /J. Wilson, in NED	a moving	(*r*) *a P around* my neck (at my neck)	
E033 The ship was dashed *against* the pier-head. /NED	a movement	(*r*) *a P directed towards* the pier-head (at the pier-head)	
E034 Guess whom I ran[2] *against*^{N} in London the other day? /NED	a movement	(*r*) *a p in contact with* whom?	
E035 Her gray eyes absolutely flamed *upon* him. /Mrs. Oliphant, in NED	a flaming	(*r*) *a p on* him	
E036 I was rudely thrown *upon*^{N} my back.	a moving impelling a movement	(*r*) *a P* with remaining portion of body *over* back (on ground)	
E037 The collocation of such names ..... as those of Aeglamour and Earine *with* such others as March and Maudlin. /Swinburne, in NED	a moving	(*r*) *the p occupied by* such others	
(5.b) *Those which may be used with or without a point of reference, without change of form.*			
E038 Don't think I want to get *aboard* your ship. /G. Macdonald, in NED	(a movement)	(*r*) *a p aboard* your ship	

[2] 'To run *against*' is used figuratively. Cf. 'into' in E024, above.

S	A	r B
E039 The Syracusans got *aboard*, and rowed along-shore. /Grote, in NED	a movement	(*r*) *a p aboard* . . .
E040 All *aboard*!	(*a movement*)	(*r*) *a p aboard* . . .
E041 Scatter seeds *about*. /NED	movings impelling movements	(*r*) *divers pp around* . . . (you)
E042 He looked *about* him[3] for some means or way To keep this unexpected holiday. /Longf., in NED	lines of sight	(*r*) *divers pp around* him
E043 In another corner a wooden stair leading *above*. /Dickens, in NED	a stair	(*r*) *a p above* . . .
E044 Lay it *across*[N] the entrance.	a moving	(*r*) *a P across* the entrance line (at the entrance)
E045 I jumped right on to the ice, and how I got *across*[N] I don't know. /Mrs. Stowe, in NED	(a movement)	(*r*) *a p on the other side of* . . .
E046 He planted roses *along* the wall.	movings	(*r*) *pp along* the wall
E047 The naked hulk *alongside*[N] came. /Coleridge, in NED	a movement	(*r*) *a P lengthwise of* . . . (*at the side of* . . .)
E048 .....The telescope is swayed by the earth's rotation *athwart* the rich regions of the galaxy. /R. A. Proctor. *Expanse of Heaven*, FUNK AND WAGNALLS New Standard Dictionary	a moving (of lines of sight)	(*r*) *PP across* the rich regions of the galaxy
E049 When many meats are set *before* me. /Hooker, in NED	a moving	(*r*) *a p before* me
E050 As ill an action as any that comes *before* the Magistrate. /Steele, in NED	a movement	(*r*) *a p before* the magistrate
E051 Advertised by two Symerons, whom he sent *before*.[N] /Johnson, in NED	an action compelling a movement	(*r*) *a p before* . . .
E052 The Benjamites looked *behind* them. /Bible, in NED	a line of sight	(*r*) *a p behind* them
E053 Go *behind* and look for it. /NED	a movement	(*r*) *a p behind* . . .

[3] Metaphorical; mental operations involving a purpose are expressed in terms of directed sight, a type of movement with ending-point.

S	A	r B
E054 It being the turn of our watch to go *below*. /R. Dana, in NED	a movement	(*r*) *a p below* . . .
E055 This new Jehu ..... Instructs the beast ..... To take the bit *between* his teeth and fly. /Dryden, in NED	a moving	(*r*) *a p between* his teeth
E056 If Mrs. B. had not thrown herself *betwixt* us. /Dickens, in NED	a movement	(*r*) *a p between* us
E057 Lofty souls who look *beyond* the tomb. /Beattie, in NED	lines of sight	(*r*) *a p beyond* the tomb
E058 Never able to pass a step *beyond* the self-drawn circle. /Spalding, in NED	a movement	(*r*) *a p beyond* (the circumference of) the self-drawn circle
E059 [The snake] retires ..... And *in* some secret Cranny slowly glides. /Dryden, in NED	a movement	(*r*) *a p in* some secret cranny
E060 The most judicious mode of putting a kicker *in* harness. /M. J. Higgins, in NED	an action compelling a movement	(*r*) *a p in* harness
E060a *In* here, please!	(*a movement*)	(*r*) *a p in* this place
E061 Show them *in*.	an action impelling a movement	(*r*) *a p in* . . .
E062 *In*bound vessels told of passing these valiant American schooners. /*Outing*, in NED	a movement	(*r*) *a p in* . . .
E063 Norway's *in*arming melancholy sea. /F. W. H. Myers, in NED	an extension	(*r*) *a p in* . . .
E064 Running down the middle of the triangular plate is the central string of tissue, the rachis, and at its end the *in*current blood-vessel. /Stud. Biol. Lab. Johns Hopkins, in NED	a flow	(*r*) *a p in* . . .
E065 I have *en*closed herewith a copy of the letter about which you inquired.	a moving	(*r*) *a p in* . . . (this envelope)
E066 I went *inside* and waited.	a movement	(*r*) *a p in* . . .
E067 Admission *within* the fold.	(an action inducing a movement)	(*r*) *a p in* the fold
E068 He put it just *outside*^{N} the door.	a moving	(*r*) *a p outside* (beyond) the door

S	A	r B
E069 The men and women were ordered to come *outside*. /R. Boldrewood, in NED	a movement	(*r*) *a p outside* . . .
E070 Pinchas ..... betook himself unceremoniously *without*. /Zangwill, in NED	a movement	(*r*) *a p outside* . . .
E071 Just lay it *on* the table.	a moving	(*r*) *a p on* the table
E072 When up reached the elder his hands there*on* to lay. /Morris, in NED under 'thereon'	a moving	(*r*) *a p on* that place
E073 Polly put the kettle *on*.	a moving	(*r*) *a p on* . . .
E074 Let us draw a veil *over* this dismal spectacle. /Temple Bar Mag., in NED	a moving	(*r*) *a p over* this spectacle
E075 Throw it *under* the bench.	a moving impelling a movement	(*r*) *a p under* the bench
E076 Rude Boreas, who likes to let daylight *under* the focussing cloth. /Photogr. Ann., in NED	(a movement)	(*r*) *a p under* the focussing cloth
E077 He went *under* for the third time.	a movement	(*r*) *a p under* . . . (the surface of the water)

(5.c) *Those which have different forms when used with or without a point of reference.*

E078 She put a chair on the table and climbed *on top*.	a climbing	(*r*) *a p on top of* . . .
E079 The arrow fell *short of* its mark by no more than a foot.	a falling	(*r*) *a p before* its mark
E080 They sailed off *to the south*^{N}.	a sailing	(*r*) *a p at the south of* . . . (their starting-point)
E081 Turn *to the east*^{N}.	a turning	(*r*) *a P facing the east of* . . . (your present location) (at . . . your present location)
E081a Then Coyote went off *west of*^{N} the mountains.	a movement	(*r*) *a p west of* the mountains
E082 We went *out of*^{N} the room and waited there for poor Tommy.	a movement	(*r*) a *p outside of* the room
E082a *Out*! *Out* with you!	(*a movement*)	(*r*) *a p outside of* (this place)

S	A	r B
E083 Come *close by* me, and tell me what is the matter. /NED under 'by'	a movement	(*r*) *a p close to* me
E084 Now they come *nearer*. /Mrs. Radcliffe, in NED	a movement	(*r*) *a p nearer to* . . .
E085 He lost no time in speaking as soon as she came *near* him. /Geo. Eliot, in NED	a movement	(*r*) *a p near* him
E086 Pull *up*^{N} your chairs.	a moving	(*r*) *a p near* . . . (*speaker*)
E087 He walked *up to*^{N} the parson.	a movement	(*r*) *a p nearer* the parson
E088 Get as *far from* here as possible.	a movement	(*r*) *a p* as *far* as possible *from* here
E089 Often he would go *apart* seeking solitude.	a movement	(*r*) *a p away from* . . . (*other people*)
E090 She folded her work, and laid it *away*^{N}. /Longf., in NED	a moving	(*r*) *another* (*but not too distant*) *place*
E091 One gentleman drew another *aside* to speak in an under-tone about Scotch bullocks. /Geo. Eliot, in NED	a movement	(*r*) *a p to one side of* . . .
E092 To evade and slip *aside from* difficulty. /Burke, in NED	a movement	(*r*) *a p to one side of* . . .
E093 I came from Arizona and I'm not going *back*.	no movement	(*r*) *the p formerly occupied* by me
(5.d) *Those which ordinarily do not take an explicit point of reference.*		
E094 Take the gentleman *up front*^{N} to a better seat.	a moving	(*r*) *a p in the front part of this place*
E095 In making this effort the spike of my axe turned *uppermost*. /Tyndall, in NED	a movement	(*r*) *a p above all* (of remaining portion of axe)
E096 The coming *together* of a crowd takes but a few minutes.	movements	(*r*) *a p occupied by* them *all*
(7) *Locutions which consist of or include some expression of direction.*		
E097 I'm going *down*^{N} *to* Tucson.	a movement	*r* Tucson, *a p downward* from . . .
E098 I'm going *up to* Wisconsin.	a movement	*r* Wisconsin, *a p upward from* . . .
E099 He sat in his car and waited for her to come *down*.	a movement	(*r*) *a p downward from* . . .
E100 I think that this case must go *down* for a new trial. /Ld. Watson, in NED	a movement	(*r*) *a p downward from* . . .

S	A	r B
E101 *Down*[N] with your sails. Motteux, in /NED	(*an action impelling a movement*)	(*r*) *a p downward from . . .*
E102 Today when I go *down town*, I shall subscribe for the 'New York Observer' for you. /Gray, in NED under 'down'.	a movement	(*r*) *a p in town downward from . . .*
E103 'Taking her *down south*'? said the man. /Mrs. Stowe, in NED	a moving	(*r*) *a p in the southern part of the country downward from . . .*
E104 He is now in Newcastle, but is coming *down south* next week. /NED	a movement	(*r*) *a p in the southern part of the country downward from . . .*
E105 Take this *downstairs* for me.	a moving	(*r*) *a p lower than the stairs downward from . . .*
E106 I'm going *upstairs*.	a movement	(*r*) *a p above the stairs upward from . . .*
E107 He seldom goes *out* in this weather. /NED	a movement	(*r*) *a p outward from . . .*
E108 Why should they put me *out*?	a moving	(*r*) *a p outward from . . .*
E109 Turn him *over*[N] on his face. /NED	a moving	(*r*) *a horizontal P facing the opposite direction from that of previous P* (at . . .)
E110 Saying that she checked and sharply turned *about*[N] to hide her face. /Tennyson, in NED	a movement	(*r*) *a vertical P facing the opposite direction from that of previous P* (at . . .)
E111 Sit *up*[N] and pay attention.	a movement	(*r*) *an upright P* (at . . .)
(8) *Locutions which express position irrespective of context.*		
E112 A tall figure reared itself *upright* at her approach. /L. B. Walford, in NED	a movement	(*r*) *an upright P* (at . . ., a horizontal surface)
E113 The films are thick enough to place in racks to wash, or to stand *upright* to dry. /Photogr. Ann., in NED	movings	(*r*) *upright PP* (at . . .)
E114 He put them *upside down* on the tables.	movings	(*r*) *vertically reversed PP* (at . . .)

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S	A	r	B
E115 To start this game the players place themselves *back to back* in two lines down the center of the room.	movements	(r) *back-to-back* (at . . .)	*PP*
(10) *Space-locative pronouns: interrogative, indicative, and relative.*			
(10.a) *Those which essentially include the e-p idea.*			
E116 *Whither* away?	(*a movement*)	r *what place?*	
E117 Come *hither*, my boy, and let me see you.	a movement	r *this place*	
E118 The road *thither* leaves the main road at right angles. /Jenkinson, in NED	a road	r *that place*	
E119 And *thither* he went, taking his young wife Annabelle.	a movement	r *that place*	
E119a I have *hereunto* set my hand and seal.	a moving	r *a p (on) this object*	
E119b The feast *where[un]to* we hasten.	a movement	r *which* (feast)	
E119c Go *whither* he went.	a movement	r *the place to which* he went	
E120 Go *whither*[N] you will.	a movement	r *whatever place* (is desired)	
E121 Wandering they knew not *whither*. /Dickens, in NED	a movement	r *what place*	
(10.b) *Those which may imply e-p relation.*			
E122 *Where* do you think you're going?	a movement	(r) *what place?*	
E123 We moved *here* last May.	a movement	(r) *this place*	
E124 Give it *here*[N].	(a moving)	(r) *this place*	
E125 It takes a half hour to walk *there*.	a movement	(r) *that place*	
E126 I'm going over *there* tomorrow.	a movement	(r) *that place*	
E127 What's taking ye *thereaways?* /Buchan, in NED	a moving	(r) *that place selected out of many possible ones*	
E128 I'm going up *yonder* the first day my back's feeling better.	a movement	(r) *yon place*	
E129 She followed on to the place *where* he had gone.	a movement (by him)	(r) *which* (place)	
E130 Let's go *where* it's quiet.	a movement	(r) *a place in which* it is quiet	

S	A	r B
E131 O! take them *anywhere*, but leave me in peace.	a moving	(*r*) *any place*
E132 We have nothing here for you, go *elsewhere*.	a movement	(*r*) *another place*
E133 Our mail system reaches *everywhere*.	a movement	(*r*) *every place*
E134 You will go *nowhere*^{N}, I tell you.	a possible movement, any movement	(*r*) *no place*
E135 They must have gone *somewhere*.	a movement	(*r*) *some place*
E136 There's no room there, put it *somewhere else*.	a moving	(*r*) *some other place*
E137 *Wherever*^{N} I go, I find the same sadness.	movements	(*r*) *any place which* (is reached)
(11) PLACES, NO PLACE, HOME, ABROAD.		
E138 You look like you're going *places*^{N}.	a movement	(*r*) *several places*
E139 All dressed up and *no place to go*^{N}.	*a possible movement*	(*r*) *no place*
E140 It's late enough for us to be going *home*.	a movement	(*r*) *home*
E141 Her final argument is that she will go *home* to mother.	a movement	(*r*) *home*
E142 He is going *abroad* for his vacation.	movements	(*r*) *pp in foreign lands*
(12) *Combinations of e-p relation with first term of relation and often also other concepts (verbs, nouns, adjectives).*		
E143 I *came upon*^{N} a flower.	*a movement*	(*r*) a flower
E144 We *came across*^{N} an old deserted cottage.	*a movement*	(*r*) an old deserted cottage
E145 The Russians ..... *came up with* his rear. /Ann. Reg., in NED under 'up'	*a movement*	(*r*) *pp at which* his rear *is*
E146 They will never *catch up to* that horse. /F. Hume, in NED under 'up'	*a movement*	(*r*) *any p at which* that horse *is*
E147 If we can only *gain* Portland before dark.	(*a movement*)	(*r*) Portland
E148 We will hope to *hit* Pendleton before nightfall.	*a movement*	(*r*) Pendleton
E149 In spite of the heavy sea they managed to *make land* without mishap.	*a movement*	(*r*) *the land*

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S	A	r	B
E150 Would you care to *join* us again later?	*a movement*	*r*	*the p occupied by* us *all*
E151 The squad succeeded in *re-joining* its brigade that day.	*a movement*	*r*	*a customarily occupied p* with its brigade
E152 Only by a ruse did we manage to *reach* the inside of the palace.	*a movement*	*r*	the inside of the palace
E153 A carriage with six mules *drew up to* the guard-house. /Southey, in NED under 'up'	*a movement*	*r*	the guard house
E154 The captain's party is the one that has thus far succeeded in *surmounting* the peak.	*a climbing*	*r*	*a p on top of* the peak
E155 She had *put*^{N} the baby to^{N} bed and now sat reading a book.	*an action compelling a movement*	*r*	*a p (in)* bed
E156 He *put*^{N} the onion to^{N} his nose.	*a moving*	*r*	*a p (before)* his nose
E157 He *put* his pack down at the gate.	*a moving*	*r*	*a p* at the gate
E158 *Stand*^{N} it in the corner.	*a moving*	*r*	*a vertical P* at a p in the corner
E159 The judge *enters* from the rear.	*a movement*	*r*	*a p in . . .*
E160 The *entrance* of the police was received with whispering and sidelong glances.	*a movement*	*r*	*a p in . . .*
E161 I *entered* the house, but saw no one.	*a movement*	*r*	*a p in . . .* the house
E162 We too often get the notion that the butler's sole function is to open doors and *admit* visitors.	*an action inducing a movement*	*r*	*a p in . . .*
E163 Knock twice and you will be *admitted*.	*an induced movement*	*r*	*a p in . . .*
E164 *Approaching* the shack, I came upon an old cistern.	*a movement*	*r*	*a p near . . .* the shack
E165 We *neared* the shore without intending, however, to land.	*a movement*	*r*	*a p near . . .* the shore
E166 We *boarded* the train and started looking for our berths.	*a movement*	*r*	*a p aboard . . .* the train
E167 He *mounted* and rode off.	*a movement*	*r*	*a p on . . . (a horse)*
E168 They *mount* their soap-boxes and hold forth to the motley crowd, whose sole occupation seems to be to listen to these harangues.	*a movement*	*r*	*a p on . . .* their soap-boxes

S	A	r	B
E169 They *mounted* the gun as quickly as possible.	*a moving*	*r*	*a p on . . .*
E170 She will *stop* at the hotel north of here.	(*a movement*)	*r*	. . ., a p at the hotel
E171 It's time to *embark*.	*a movement*	*r*	*a p on . . .* (*a boat*)
E172 Two stones with *incised* crosses. /Lubbock, in NED	*extent of cuttings*	*r*	*pp in . . .* stones, (which have the form of) crosses
E173 He was not your ordinary drunkard, who will *imbibe* just anything.	*a drinking*	*r*	*a p inside oneself*
E174 We *import* large quantities of coffee every year.	*actions inducing movings*	*r*	*pp in one's country*
E175 The price of our *imported* cotton is relatively high.	*actions inducing movings*	*r*	*pp in one's country*
E176 When the metal reaches the proper temperature, it is *immersed* in cold water.	*an action compelling a movement*	*r*	*a p in liquid*, in cold water
E177 It is like *inserting a* monkey wrench into the mechanism.	*an action compelling a movement*	*r*	*a p in . . .*, in the mechanism
E178 *Introduce* a few drops of the acid into the nitrate.	*an action compelling a movement*	*r*	*a p in . . .*, in the nitrate
E179 He *landed* poorly and was off-stride for the next hurdle.	*a movement*	*r*	*a p on the ground*
E180 The *landing* of the pilgrims.	*a movement*	*r*	*a p on the land*
E181 He *landed* on the champion with his right.	*a moving*	*r*	*a p on . . .*, on the champion
E182 Cats always *light* on their feet.	*a movement*	*r*	*a p on . . .* (the ground) at which a P with remaining portion of body above feet
E183 Mr. Thurston of the finance committee wishes *to table* the resolution.	*a moving*	*r*	*a p on the table* (fig.)
E184 The more our *arrival* is unheralded, the better will be the results.	*a movement*	*r*	. . .
E185 We *arrived* in Paris.	*a movement*	*r*	. . ., a p in Paris
E186 Osgood didn't *turn up* after all.	*a movement*	*r*	*a p at . . .*
E187 To cut and *deliver* the materials at the spot. /G. White, in NED under 'at'	*a moving*	*r*	. . ., a p at the spot
E188 These streamers seem to *converge* at a point beyond the zenith. /Sc. Monthly, in NED	*movements from various directions*	*r*	*a p occupied by* them *all*

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S	A	r	B
E189 He *returned* late last night.	*a movement*	*r*	*the p formerly occupied* by him
E190 The masked wrestler having *downed* all the professional athletes. /Gunter, in NED	*an action compelling movements*	(*r*)	*pp downward from . . . (self)*
E191 If caught in a hard sudden squall, *down* helm at once. /Bedford, in NED	*a moving*	(*r*)	*a p downward from . . .*
E192 She could not afford two *outings* in the year. /Illustr. Lond. News, in NED	*trips*	*r*	*pp outward from . . . (urban home)*
E193 With that he ups and he *outs*. /Doyle, in NED	*a movement*	*r*	*a p outward from . . .*
E194 The Westerner may *out* pistol and shoot you if you annoy him. /M. O'Rell, in NED	*a moving*	*r*	*a p outward from . . . (pocket)*
E195 Someone is always *coming* to pay us a visit.	*a movement*	(*r*)	*(this place)*

SAMPLES OF THE EXPRESSION OF THE ENDING-POINT RELATION IN FRENCH

S Sample Sentence	A First term of relation	r Relation	B Second term of relation
(1) *Predicative e-p expression.*			
F001 Son voyage *s'est terminé à* Adrianople.	a voyage	*-r*	Adrianople
(2) *Usual e-p relaters, occasionally with implication of additional concepts.*			
F002 *Au* voleur!	(*a movement*)	*r*	the thief
F003 *A* la gare!	(*a movement*)	*r*	the station
F004 Ils ont touché *au* port.	(*a movement*)	*r*	port
F005 Je méditais ma fuite *aux* terres étrangères. /Racine, in LITTRÉ	a flight	*r*	foreign lands
F006 Enfin je viens *à* vous. /Racine, in LITTRÉ	a movement	*r*	you
F007 Je respecte Idamé *jusqu'*en son époux même. /Volt., in LITTRÉ under 'jusque'	(an extent)	*r*	her spouse
F008 Il est monté *jusque* sur les toits.	a movement	*r*	a p on the roofs

S	A	r B
F009 *Jusqu'où?*	(*a movement*)	*r* what place?
F010 Apportez-les *jusqu'*ici, s'il vous plaît.	a moving	*r* this place

(5) *Relational locative expressions which may imply e-p relation.*

(5.a) *Those which require an explicit point of reference.*

F011 C'est toujours un cher plaisir que de retourner *chez* soi après un long voyage.	a movement	(*r*) *a p at* one's own *place*
F012 Il saute *dans* la tranchée avant tous.	a jump	(*r*) *a p in* the trench
F013 Il va *en* Italie.	a movement	(*r*) *a p in* Italy
F014 Le comte est allé *en* province.	a movement	(*r*) *a p in* the country
F015 Je me jette *sous* un arbre pour lire.	a movement	(*r*) *a p under* a tree
F016 La mouette descend lentement *sur* l'eau.	a movement	(*r*) *a p on* the water
F017 Place-toi *contre* ce logis. /Mol., in LITTRÉ	(a movement)	(*r*) *a p opposite* this dwelling
F018 La révolution de la lune interpose ce satellite *entre* le soleil et la terre. /LITTRÉ under 'interposer'	a movement	(*r*) *a p between* the sun and the earth

(5.c) *Those which have different forms when used with or without a point of reference.*

F019 Qu'on passe deux fois *Au deçà* du rivage blême. /Malh., in LITTRÉ under 'deça'	a movement	(*r*) *a p this side of* the shore
F020 Peuples qui erraient *deçà* et delà sur des chariots. /Boss., in LITTRÉ under 'deçà'	a wandering	(*r*) *a p this side of* . . .
F021 Qu'appelle-t-on franchir les bornes de toute pudeur et passer *au delà de* toute impudence .....? /Pasc., in LITTRÉ under 'delà'	a movement	(*r*) *a p beyond* all impudence
F022 Porter *delà* les mers ses hautes destinées. /Corn., in LITTRÉ	a moving	(*r*) *a p beyond* the seas
F023 Le comte Raimond mettait *en dehors* toute son âme. /Staël, in LITTRÉ under 'dehors'	a moving	(*r*) *a p outside* . . .
F024 Il est allé *au dehors de* la ville.	a movement	(*r*) *a p outside of* the city

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S	A	r B
F025 Ce bâtiment va mettre *dehors*. /LITTRÉ	a moving	(*r*) *a p outside of* . . .
F025a *Dehors*!	(*a movement*)	(*r*) *a p outside of* . . .
F026 Je n'entre pas là-*dedans*. /Pascal, in LITTRÉ under 'là'	no movement	(*r*) *a p in* that place
F027 L'eau ne nous venait qu'*au dessous* du genou. /LITTRÉ under 'dessous'	a movement	(*r*) *a p below* the knee
F028 Mettez ce paquet là-*dessous*. /LITTRÉ under 'là'	a moving	(*r*) *a p below* that place
F029 Il tâcha de me mettre *dessous*. /Fén., in LITTRÉ	a moving	(*r*) *a p below* . . .
F030 Elle avait placé son tombeau *au dessus d'*une des portes les plus remarquables de la ville. /Rollin, in LITTRÉ under 'dessus'	a placing	(*r*) *a p above* one of the doors
F031 Mettez ce livre là-*dessus*. /LITTRÉ under 'là'	a moving	(*r*) *a p above* that place
F031a Là-*dessus*, s'il vous plaît.	(*a moving*)	(*r*) *a p on* that place
F032 Ce qui est sous la table mettez-le *dessus*. /LITTRÉ	a moving	(*r*) *a p above* . . . (*table*)
F033 Il mit les chaises *autour de* la table.	a moving	(*r*) *pp about* the table
F034 La foule se portait *au-devant* du prince. /LITTRÉ under 'devant'	a movement	(*r*) *a p before* the prince
F035 Les services d'Hipal en ce même moment Lui reviennent *devant* la vue. /La Font., in LITTRÉ	a movement	(*r*) *a p before* his sight
F036 Allez *devant*.	a movement	(*r*) *a p before* . . .
F037 La troupe s'arrête *derrière* la forêt.	a movement	(*r*) *a p behind* the forest
F038 Il s'est retiré *derrière* un retranchement. /d'Ablancourt, in LITTRÉ	a movement	(*r*) *a p behind* an intrenchment
F039 Monsieur s'assiéra *au haut de* la table.	a movement	(*r*) *a p at the head of* the table
F040 *Alentour* du muet toutes huit accoururent. /La Font., in LITTRÉ	a running	(*r*) *pp about* the dumb man
F041 Elle répandait *alentour* du blé pour les poules.	movings impelling movements	(*r*) *pp about* . . . (*self*)

S	A	r	B
(6) *Prefixes which sometimes express e-p relation.*			
F042 Le maréchal s'étant *ache*miné pour aller à Trèves...../Sév., in LITTRÉ under 'acheminer'	a movement	*r*	the road
F043 On conclut Qu'il ne fallait s'*at*tabler davantage. /La Font., in LITTRÉ under 'attabler'	a movement	*r*	*a p at* the table
F044 Le bruit en *ar*riva aux oreilles de la police. /LITTRÉ under 'arriver'	a movement	*r*	. . ., the ears of the police
F045 Les *ar*rivants étaient nombreux.	a movement	*r*	. . .
F046 Il lui *as*séna un coup de baton sur la tête. /LITTRÉ under 'asséner'	an action impelling a movement	*r*	a p on his head
F047 Les glorieux *as*sauts de plus de cent murailles. /Corn., in LITTRÉ under 'assaut'	a movement	*r*	*pp at* more than a hundred walls
F048 Je n'*as*siége pas la porte des grands. /Boss., in LITTRÉ under 'assiéger'	a movement	*r*	the door
F049 Cet enfant brise tout ce qu'il *at*teint. /LITTRÉ under 'atteindre'	a movement	*r*	everything
F050 *A*pprochez-vous du feu.	a movement	*r*	a p near the fire
F051 Il s'*em*barqua sur un paquebot. /LITTRÉ under 'embarquer'	a movement	(*r*)	*a p in* . . ., on a merchant ship
F052 Je fais *en*cadrer nos dessins. /J. J. Rouss., in LITTRÉ under 'encadrer'	movings	(*r*)	*pp in* frames
F053 Le harnais éclatant qu'il avait *en*dossé. /Tristan in LITTRÉ under 'endosser'	a moving	(*r*)	*a p on* his back
F054 La vieillesse chagrine incessamment amasse, Garde non pas pour soi les trésors qu'elle *en*tasse. /Boil., in LITTRÉ under 'entasser'	a moving	(*r*)	*pp in* a pile
F055 Et, pour gagner, *em*ballent et déchargent toutes sortes de marchandises prohibées et défendues. /Arrêt du Conseil d'État, in LITTRÉ under 'emballer'	a moving	(*r*)	*pp in* a package

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S	A	r B
F056 Quand j'avais *em*poché mon livre, je ne songeais plus à rien. /J. J. Rouss., in LITTRÉ under 'empocher'	a moving	(*r*) *a p in* my pocket
F057 Si on vendait le feu et l'eau, il devrait être permis de les *im*porter et de les exporter d'un bout de la France à l'autre. /Volt., in LITTRÉ under 'importer'	actions inducing movings	(*r*) *pp in* . . .
F758 On n'*in*cise point l'arbre du côté de la terre, mais du côté de l'eau, pour qu'il tombe sur le courant. /Chateaub., in LITTRÉ under 'inciser'	a cutting	(*r*) *a p in* the tree
F059 L'eau s'*in*filtre dans le bois le plus dur. /LITTRÉ under 'infiltrer'	a movement	(*r*) *a p in* . . . the toughest wood
F060 Il faudrait avoir un moyen d'évaluer la quantité d'eau que les plantes *im*bibent de cette manière. /Bonnet, in LITTRÉ under 'imbiber'	a moving	(*r*) *pp in* (*themselves*)
F061 Le gouvernement qu'on essaya d'*im*planter en ce pays. /LITTRÉ under 'implanter'	a moving	(*r*) *a p in* . . . this country
F062 La révolution de la lune *inter*pose ce satellite entre le soleil et la terre. /LITTRÉ under interposer'	a movement	(*r*) *a p between* . . . and . . . the sun and the earth
F063 *Entre*mêler des fleurs rouges à des fleurs blanches. /LITTRÉ under 'entremêler'	a moving	(*r*) *pp among* . . . white flowers
F064 Il est avéré aujourd'hui que les cinq ou six lignes qu'on attribue à Josèphe sur Jésus, ont été *inter*polées par une fraude très-maladroite. /Volt., in LITTRÉ under 'interpoler'	a moving	(*r*) *a p between* . . . and . . .
F065 Il faut ne *trans*vaser les vins que lorsqu'ils sont bien faits. /Genlis, in LITTRÉ	actions impelling movements	(*r*) *pp in other* vessels
F066 Il a *trans*porté leurs bagages d'une gare à l'autre.	a moving	(*r*) *pp in another* station

S	A	r	B

(8) *Locutions which express position irrespective of context.*

F067	Je me mets *debout.*	a movement	(*r*) *an erect P* (at . . .)
F068	Elle a mis son bonnet *sens devant derrière.* /LITTRÉ under 'devant'	a moving	(*r*) *a reversed P* (at . . .)

(10.b) *Interrogative, indicative, and relative pronouns which may imply e-p relation.*

F069	*Où* vont toutes ces personnes?	a movement	(*r*) *what place?*
F070	Valère, *ici.* /Destouches, in LITTRÉ	(*a movement*)	(*r*) *this place*
F071	Vous savez quel sujet conduit *ici* leurs pas. /Rac., in LITTRÉ (fig.)	a moving	(*r*) *this place*
F072	D'ici *là* on compte deux lieues. /LITTRÉ	(*an extent of space*)	(*r*) *that place*
F073	C'est *là* que je veux aller. /LITTRÉ	a movement	(*r*) *that place*
F074	Nous n'avons pas assez d'argent pour *y* voyager.	a movement	(*r*) *that place*
F074a	L'eau limpide *s'y* déverse.	a movement	(*r*) *pp* (*in*) *that object*
F074b	*J'y* ai apposé ma signature.	a moving	(*r*) *a p* (*on*) *that object*
F075	Nous allons *là-bas* de temps en temps.	a movement	(*r*) *yonder place*
F076	Si son clerc vient *céans*, fais-lui goûter mon vin. /Rac., in LITTRÉ	a movement	(*r*) *a p in this place*
F077	Je l'évite partout, *partout* il me poursuit. /Rac., in LITTRÉ	a movement	(*r*) *every place*
F078	*Quelque part* et quelque loin que l'on ait pénétré depuis la perfection de l'art de la navigation, l'homme a trouvé partout des hommes. /Buff., in LITTRÉ under 'part'	movements	(*r*) *pp in any place* which (has been reached)
F079	Je vais *où* le vent me mène.	a movement	(*r*) *any place to which* the wind has or will have taken me

(12) *Combinations of e-p relation with first term of relation and often also with other concepts (verbs, nouns, adjectives).*

F080	Ô mânes de mon père! ..... N'ayant pu vous venger, je vous irai *rejoindre.* /Corn., in LITTRÉ	*a movement*	*r a formerly occupied p near* you

S	A	r	B
F081 Ces deux rivières *confluent* au-dessus de Paris. /Littré under 'confluer'	*movements*	*r*	*a place occupied by both* below Paris
F082 *Entrons* dans le salon. /Littré	*a movement*	*r*	*a p in . . .*, in the salon
F083 Il est temps de *rentrer* dans la salle.	*a movement*	*r*	*a p formerly occupied*, in the room
F084 Il *monte* à cheval.[1]	*a movement*	*r*	*a p on . . .*, on a horse
F085 Il ne put jamais *parvenir* au haut de la montagne. /Littré	*a movement*	*r*	. . ., a p at the top of the mountain
F086 Il y a longtemps qu'il *est venu*.	*a movement*	(*r*)	(*this place*)
F087 Toutes les marchandises se trouvent enfin *transportées*.	*movings*	*r*	*other places*
F088 Les papiers sont *emballés* dans une boîte.	*a moving*	(*r*)	*pp in . . .*, in a box
F089 Le *rapprochement* est complet.	*movements*	*r*	*pp [formerly] occupied by them in common* (fig.)
F090 C'est un bon *atterrissage*.	*a movement*	*r*	*a p on the ground*

Samples of the Expression of the Ending-Point Relation in German

S Sample Sentence	A First term of relation	r Relation	B Second term of relation
(1) *Predicative e-p expression.*			
G001 Die Reise *kommt in* Berlin *zu Ende*.	a movement	*-r*	Berlin
(2) *Usual e-p relaters, occasionally with implication of additional concepts.*			
G002 Er geht *zur* Schule. /Grimm	a movement	*r*	the school
G003 Nähert sich *zu* ihm. /Lohenstein, in Grimm	a movement	*r*	he
G004 Man fährt Steine *zur* Stadt. /Curme, p. 372	a moving	*r*	the city
G005 Ich will Sie *zu* ihm führen. /Curme, p. 372	a moving	*r*	he

[1] *Monter à cheval* can mean 'to ride horseback' or 'to get up on a horse'.

S	A	r	B
G006 Er hat die Feder *zu* den übrigen gelegt. /Curme, p. 372	a moving	*r*	*a p near* the others
G007 Wie komme ich *nach* der Friedrichstrasse? /Curme, p. 369	a movement	*r*	Friedrichstrasse
G008 Er geht *nach* der Stadt zu seinem Bruder. /Curme, p. 372	a movement	*r*	the city
(3) Bis.			
G009 Ich reise mit *bis* Wien. /Grimm	a movement	*r*	Vienna
G010 Der Herzog und Staff sind *bis* herauf gegangen. /Göthe, in Grimm under 'herauf'	a movement	*r*	a p above . . .
G011 Sie würde mich *bis*[1] in dem Zimmer der Sara suchen. /Lessing, in Grimm	a movement	*r*	(a p) in Sara's room
G012 Er habe sie noch tot *bis* hinunter ins Leuker Bad gebracht. /Göthe, in Grimm under 'bis'	a moving	*r*	a p below . . .
(5) *Relational locative expressions which may imply e-p relation.*			
(5.a-1) *Those which with the accusative express both e-p and a locative relation, and with the dative express only a locative relation.* (*See beginning of page 25.*)			
G013 Wir ziehen den Kahn *ans* Ufer heran. /Grimm under 'heran'	a moving	*r*	the shore
G014 Er trat *an* das Bett. /Curme, p. 372	a movement	*r*	the bed
G015 Er setzte sich *an* meine Seite. /Curme, p. 380	a movement	*r*	*a p by* my side
G016 Das Wasser reichte bis *an* die Knie. /Curme, p. 380	an extending	*r*	the knees
G017 Er klettert *auf* den Baum. /Curme, p. 381	a climbing	*r*	*a p on* the tree
G018 Sie fahren *aufs* Land. /Curme, p. 381	a movement	*r*	*a p in* the country
G019 Er setzte sich *auf* den Stuhl. /Grimm	a movement	*r*	a sitting P at *a p on* the chair

[1] *Bis* functions here as the sole means of indicating the ending-point relation, for 'in' used with the dative case has the locative function. Contrast the next sample where 'in' with the accusative repeats the ending-point relation.

S	A	r	B
G020 Sie wird am Ende doch erraten, dass sie *hinter* die Sache gekommen sind. /Gellert, in Grimm	a movement	*r*	*a p behind* the affair (fig.)
G021 Sie sollen sich *hinter* die Tapeten verstecken. /Schiller, in Grimm	a movement	*r*	*a p behind* the carpets
G022 Die Abendröte, die grade *in* sein Gesicht fiel. /J. Paul, in Grimm	a movement	*r*	*a p on* his face
G023 Er ging *in* den Garten. /Curme, p. 384	a movement	*r*	*a p in* the garden
G024 Wasser *in* den Krug schütten. /Grimm	an action impelling a movement	*r*	*a p in* the jug
G025 Er hat sein Haus *neben* das meinige gebaut. /Curme, p. 384	a moving	*r*	*a p near* my house
G026 Er setzte sich *neben* mich. /Curme, p. 384	a movement	*r*	a sitting P at *a p near* me
G027 Der Adler erhebt sich *über* die Wolken. /Curme, p. 385	a movement	*r*	*a p over* the clouds
G028 Wir setzten uns *unter* den Baum. /Curme, p. 386	a movement	*r*	a sitting P at *a p under* the tree
G029 Er spannt die Pferde *vor* den Wagen. /Curme, p. 386	an action compelling movements	*r*	side by side PP at *a p before* the wagon
G030 Er wirft seine Perlen *vor* die Säue. /Curme, p. 386	a moving impelling a movement	*r*	*a p before* the sows
G031 Ich blickte zum Baume empor, eine Frucht fiel herab *vor* meine Füsse. /Grimm under 'herab'	a movement	*r*	*a p before* my feet
G032 Sie setzte sich *zwischen* mich und ihren Bruder. /Curme, p. 386	a movement	*r*	*a p between* me and her brother
(5.a-2) *Same forms as 5.a-1, suffixed to 'da-' and 'wo-'.*			
G033 Er klebt einen Zettel dar*an*. /Grimm under 'daran'	a moving	(*r*)	*a p on* it
G034 Er giesst Wein dar*an*. /Grimm under 'daran'	an action impelling a movement	(*r*)	*a p on* it
G035 Wir legen unsre Klauen dr*auf*. /Göthe, in Grimm under 'darauf'	a moving	(*r*)	*a p on* it
G036 Es war nicht mehr auf dem Tische, wor*auf* ich es gelegt hatte.	a moving	(*r*)	*a p on* which (the table)

S	A	r B
G037 In dem Zimmer stand eine spanische Wand, sobald er jemand kommen hörte, machte er sich da*hinter*. /Grimm under 'dahinter'	a movement	(*r*) *a p behind* it
G037a Da*hinter*, bitte!	(*a movement*)	(*r*) *a p behind* that place
G038 Wo*hinter* konnte sich der Knabe versteckt haben?	a movement	(*r*) *a p behind* what?
G039 Die Sonne steige nie aus roter Flut Und sinke nie dar*ein*. /Kleist, in Grimm under 'darein'	a movement	(*r*) *a p in* it
G040 Dies ist das Wasser, wor*in* der Ring gefallen ist.	a movement	(*r*) *a p in* which (the water)
G041 Er stellte sich unmittelbar da*neben*.	a movement	(*r*) *a p near* it
G042 Da zersprang die Maschine, wo*neben* er die Lampe gestellt hatte.	a moving	(*r*) *a p near* which (the machine)
G043 Das Dienstmädchen legte ein weisses Tuch dar*über*.	a moving	(*r*) *a p over* it
G044 . . . und haben dar*unter* die Kranken getragen. /Schuppius, in Grimm under 'darunter'	a moving	(*r*) *a p under* it
G045 'Er ging unter die Brücke,' sagte ich. 'Wor*unter?*' fragte er.	(*a movement*)	(*r*) *a p under* what?
G046 Sie zog einen Vorhang da*vor*. /Grimm under 'davor'	a moving	(*r*) *a p before* it
G047 Bringen Sie mich zu dem Gasthaus, wo*vor* die Post hält.	a movement	(*r*) *a p before* which (the inn)
G048 Die Da*zwischen*kunft des Kaisers und ein Bannstral aus Rom bewaffnete gegen ihn seine Landstände und sein Capitel. /Schiller, in Grimm	a movement	(*r*) *a p between* them (the different factors of the situation)
G049 Die Bäume, wo*zwischen* der Apfel gefallen war, fingen an zu streiten.	a movement	(*r*) *a p between* which (the trees)

(5.a-3) *Those which are construed with the genitive, dative, or accusative.*

With the genitive.

G050 Immer wider bringst du die kotigen Schuhe *innerhalb* meiner Küche.	a moving	(*r*) *a p in* my kitchen

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S	A	r B
G051 Sie kamen *diesseits* des Gebirges und besiedelten ein grosses Gebiet.	a movement	(r) *a p this side of* the mountain range
G052 Es ist gefühllos von Ihnen, dass Sie die arme Katze *ausserhalb* des Hauses bei dieser Kälte jagen.	an action compelling a movement	(r) *a p outside* the house
With the dative.		
G053 Kehren Sie, bitte, *bei* mir ein.	a movement	(r) *a p at* my place
G054 Er nahm ihm grad *gegenüber* Platz. /CURME, p. 367	a movement	(r) *a P facing* him (at . . .)
G055 Man stelle sie mir *gegenüber*. /Schiller, in GRIMM	a moving	(r) *a P facing* me (at . . .)
G056 Er stellte Karl an eine Seite der Tür Heinrich direkt *gegenüber*.	a moving	(r) *a P facing* Henry (at . . .)
G057 *Nächst* ihr stellt' er sich selber den schöngebildeten Sessel. /Voss, in GRIMM	a moving	(r) a vertical P at *a p next to* her
With the accusative.		
G058 Er lenkt seine Schritte *gegen* Westen. /CURME, p. 369	a *directed* turning	(r) *pp facing* the west (at . . .)
G059 Die Gäste setzten sich *um* den Tisch.	a movement	(r) sitting PP at *pp about* the table
G060 Sie lehnte den Besen *gegen* (*wider*) die Wand.	a moving	(r) a leaning P at *a p against* the wall
(5.d) *Those which never take an explicit point of reference.*		
G061 ..... indem er ihn *beiseite* nahm. /Göthe, in GRIMM	a moving	(r) *a p to one side of* . . .
G062 Sie nahmen den Vorleser *beiseit* und beschworen ihn. /Klingers, in GRIMM	a moving	(r) *a p to one side of* . . .
G063 Sie kommen jede Woche *zusammen*.	a movement	(r) *a p occupied by* them *all*
(7) *Locutions which include some expression of direction.*		
G064 *Herab* vom Pferde! /GRIMM	(*a movement*)	*r a p downward from* . . . the horse
G065 Als er nun *herab*gelangt, ihr unter den hohen Bäumen am ländlichen Tische gegenüber sass /Göthe, in GRIMM	a movement	*r a p downward from* . . .

S	A	r B
G066 Sie waren kaum *heraufge*kommen, als der Hauptmann schon da war.	a movement	*r a p upward from* . . .
G067 Kinder die aus der Schule *heraus*brausen. /J. Paul, in GRIMM	a movement	*r a p outward from* . . . the schoolhouse
G068 Du kannst die Freude bald erleben, Das Kesselchen *heraus*zuheben. /Göthe, in GRIMM	a moving	*r a p outward from* . . .
G069 *Heraus* mit eurem Federwisch! /Göthe, in GRIMM	(*a moving*)	*r a p outward from* . . .
G070 Die Menge quoll vor das Tor *hinaus*. /GRIMM	a movement	*r a p outward from* . . . , before the gate
G071 Ich werde mich über die Menschen *hinaus*reissen. /J. Paul in GRIMM	a movement	*r a p outward from* . . .
G072 Als der Mond über den Apennin *herüber* war. /J. Paul, in GRIMM	(a movement)	*r a p hitherward from and past* . . . the Apennines
G073 Der Alte brachte aus einem Kasten allerlei Raritäten *hervor*. /GRIMM	a moving	*r a p hitherward from and before* . . . a box
G074 Da kommst du schon *hervor*gehüpft. /Göthe, in GRIMM	a movement	*r a p hitherward from and before* . . .
G075 Er kehrte den Stein *herum*. /GRIMM	a turning	(*r*) *a reverse P* (at . . .)
G076 Hermann kommt aus der Schule *zurück*.	a *reverse* movement	(*r*) *the original p formerly occupied* by him.

(8) *Locutions which express position irrespective of context.*

G077 Unser Boot legte sich *langseit* dem englischen Dampfer. /Gerstäcker, in CURME, p. 362	a movement	(*r*) *a P lengthwise of* the English steamship (*at the side of* the steamship)
G078 Die Infanterie entwickelte sich *rittlings* der Strasse. /Moltke, in CURME, p. 363	movements	(*r*) *PP straddling* (fig.) the street (at . . . the street)
G079 Setzt sich der Aff *rittlings* aufs Holz und spaltets mit der Axt. /Lehmann, in GRIMM	a movement	(*r*) *a P straddling* the wood (at . . . the wood)

S	A	r	B

(9) *Indicative pronouns which include the e-p idea:* HER *and* HIN *alone, or plus* -AN, -BEI, -EIN (-IN), -VOR, -ZU, -ZWISCHEN, *or plus a stem which expresses a motion.*

G080 Komm *her!*	a movement	*r*	*this place*
G081 Auf der Hinfahrt trafen wir keine, auf der *Her*fahrt recht angenehme Gesellschaft. /GRIMM	a trip	*r*	*this place*
G082 Dass ich die böhmschen Spielleut *her*bestellte. /Körner, in GRIMM	an action compelling movements	*r*	*this place*
G083 *Herbei*, ihr Männer, gute Leute, helft! Gewalt! Gewalt! Sie führen ihn gefangen! /Schiller, in GRIMM	(*a movement*)	*r*	*this place*
G084 Wenn sich Baylens Schattengestalt durch Beschwörungen *herbei*zaubern liesse. /Abbt, in GRIMM	an action [an incantation] compelling a movement	*r*	*the (indicated) X* (a place *near* them)
G085 Die Sonne veranlasst den *Herbei*zug der nördlichen Luft. /Kant, in GRIMM	a movement	*r*	*the (indicated) X*
G086 *Herein*! herein Gesellen alle! /Schiller, in GRIMM	(*a movement*)	*r*	*a p in this place*
G087 Als Eduard erwachte, schien ihm der Tag ahnungsvoll *herein*zublicken.	a line of sight	*r*	*a p in the (indicated) X* (his room)
G088 Samed zittert *herzu*, und umarmt ihn. /Klopstock, in GRIMM	a movement	*r*	*the (indicated) X* (he)
G089 Sie trat näher *herzu*. /Göthe in SANDERS	a movement	*r*	a p nearer to *the (indicated) X*
G090 Wie weit ists *hin?* /Göthe, in GRIMM	an extent	*r*	*that place?*
G091 Dem wächst das Herze gleich, wenn je ein Waldgeschrei Von Hunden wird erweckt, da macht er sich *hinbei*. /Morhof, in GRIMM	(a movement)	*r*	*that place*
G092 Das Grubenlicht immer bleicher *hinein*flimmernd in die einsame Nacht. /H. Heine, in GRIMM	lines of light	*r*	*a p in that place*, in the night
G093 Sie begeben sich in das Haus *hinein*. /Göthe, in GRIMM	a movement	*r*	*a p in that place*, in the house
G094 Er sah einen Feigenbaum an dem Wege, und ging *hinzu*. /Matth., in GRIMM	a movement	*r*	*it*, a fig-tree

S	A	r	B

(10.a) *Interrogative, indicative, and relative pronouns which include the e-p idea:* HER *and* HIN *suffixed to or following* HIER; HIN *after* WO, DA, DORT, ÜBERALL, IRGENDWO, *etc.*

G095 *Wohin* müssen Sie so früh?	(*a movement*)	*r what place?*	
G096 *Wo* kam der Waidmann *hin*, mit dem ich sprach? /Schiller, in GRIMM under 'hin'	a movement	*r what place?*	
G097 *Hierher* kommen nur Reiche.	a movement	*r this place*	
G098 *Hierhin* musst du sehen, nicht dahin. /GRIMM	a line of sight	*r this place*	
G099 Die das Abenteuer ihrer *Dahin*kunft zu erfahren höchst begierige Thusnelde. /Lohenst., in GRIMM	a movement	*r that place*	
G100 Ich weiss nicht, wie ich je *dahin* kommen werde.	a movement	*r that place*	
G101 Ich will es *dahinein* stecken. /GRIMM	a movement	*r a p in that place*	
G102 Man sagt, er sei schon *dorthin* gegangen.	a movement	*r that place*	
G103 Er wollte *überallhin* können. /Woldemar, in GRIMM	(movements)	*r every place*	
G104 Könnten Sie mir bitte sagen, *wohin* dieser Zug fährt?	a movement	*r what place?*	
G105 Schicken Sie es *wohin* Sie wollen, ich habe nichts dagegen.	an action compelling a movement	*r any place which* you choose	
G105a Wir gehen *wohin* er gegangen ist.	a movement	*r the place to which* he has gone	
G106 Ich werde *irgendwohin* gehen, nur nicht zu ihm.	a movement	*r any place whatsoever*	
G107 Ich weiss *nirgendswohin*. /MURET-SANDERS	(*a possible, any movement*)	*r no place*[2]	
G108 *Anderswohin* abweichend verkündigen. /Voss, in GRIMM	(a movement)	*r another place*	

(11) *Noun which may imply e-p relation:* HEIM

G109 Der Hirt treibt die Herde *heim*. /GRIMM	an action compelling a movement	(*r*) *home*	
G110 Die Fürsten in Schlesien auf die *Heim*führung einzuladen. /Schweinichen, in GRIMM	a movement	(*r*) *home*	

[2] A POSSIBLE MOVEMENT *to no* PLACE = ANY MOVEMENT *negated to any* PLACE. Cf. note to E134.

S	A	r	B
G111 Es waren ihm aber ein paar Knotten ..... in die Schuhe gefallen, die drückten ihn auf dem *Heim*weg. /GRIMM	a road	(*r*) *home*	

(12) *Combinations of e-p relation with first term of relation and often also with other concepts (verbs, nouns, adjectives).*

G112 Diese verwilderte Ortschaft lässt sich nicht leicht *erreichen.*	*a movement*	*r*	this wild country
G113 Könnten wir nur den See *erreichen.*	*a movement*	*r*	the lake
G114 Die Kleinen *gerieten* in einen grossen Saal, wo alles von Zuckerwerk gemacht war.	*a movement*	*r*	*a p* in a large room
G115 Es ist schon Zeit *halt* zu *machen.*	*a movement*	*r*	. . .
G116 Der .... Alte ..... *macht* an jedem Port, auf jeder Insel *Halte.* /Wieland, in SANDERS	*movements*	*r*	. . . pp at every port and every island
G117 Hast du gehört dass der Onkel gestern *gekommen ist?*	*a movement*	(*r*)	(*this place*)
G118 Der Berg ist *ersteigbar.*	*a possible climbing*	*r*	(the top of) the hill
G119 Crusoe *erstieg* den Berg und sah umher.	*a climbing*	*r*	(the top of) the hill
G120 *Aufsteigen!*	*a climbing*	(*r*)	*pp on* . . .
G121 Da wurde eine grosse Gans *aufgetragen.*	*a carrying*	(*r*)	*a p on* . . .
G122 Er *setzte* den Hut *auf.*	*a moving*	(*r*)	*a p on* . . .
G123 Als ich zum erstenmal vor dem Publicum als Schriftsteller *auftrat.* /Gökingk, in GRIMM	*a movement*	(*r*)	*a p before* . . . the public
G124 Ich kann dir keine Leckereien *auftischen.* /GRIMM	*a moving*	(*r*)	*a p on the table*
G125 Ich hatte des früh *Angekommenen* schon vergessen.	*a movement*	*r*	. . .
G126 Ich werde ihm gleich meine *Ankunft* melden.	*a movement*	*r*	. . .
G127 Es ist ihm Gift in Wein *beigebracht* worden. /GRIMM	*a moving*	(*r*)	*a p before* . . . him
G128 Es müssen noch zwei Pferde *beigespannt* werden. /GRIMM	*an action compelling movements*	(*r*)	(side by side *PP*) at *pp beside* . . .
G129 Er ist bei der Quelle *stehen geblieben.*	*a movement*	*r*	*a standing P* (at a p) before the well

S	A	r	B
G130 Das Speer *blieb* in seiner linken Seite *stecken*	(*a movement*)	*r*	*a protruding P* (at a p) in his left side
G131 Er *stellte* sich vor den Grabstein seines Vaters und weinte.	*a movement*	*r*	*a vertical P* before the gravestone
G132 Er *stellte* sich auf den Kopf.	*a movement*	*r*	*a vertical P* with remaining portion of body above head (on . . .)
G133 *Setzen* Sie sich (nieder) wo es Ihnen am bequemsten ist.	*a movement*	*r*	*a sitting P* (on . . .)
G134 Der schläfrige Knabe *legte* sich müde unter den Baum.	*a movement*	*r*	*a horizontal P* under the tree
G135 Sie sah mich wunderfreundlich an Und *bot* den Mund mir *dar* zum Kuss. /Hölty, in GRIMM	*a specifically directed moving*	(*r*)	I
G136 Und *reichte* ..... Dem Gönner eine Bittschrift *dar*. /Gellert, in GRIMM	*a specifically directed moving*	*r*	the patron
G137 Als hätten ..... mehr denn hundert Festen ihm Die Schlüssel ihrer Tore *dargesandt*. /Broxtermann, in GRIMM	*specifically directed actions compelling movements*	(*r*)	he
G138 Das *dahingleitende* Schiff verschwindet in der Ferne.	*a movement*	*r*	*that place*

PART III: NOTES

Space-Locative Pronouns

Space-locative pronouns (or, in other words, pronouns of space-location) play so conspicuous a rôle in any study of the expressions of the ending-point relation that it seems not out of order to devote a few pages to observations on some of their characteristics.

Of space locative pronouns one may say in general that they have the meaning of nouns with preposition and the syntax of pronouns. Their logical content includes both substantial and relational elements. For example, *thither* may be rendered '*which has as ending-point* THAT PLACE'; it expresses the ending-point relation plus the substantial 'that place'.

Space-locative pronouns occur in great variety in the languages of this study. The various forms are based on distinctions in the component elements of meaning with regard to mode, method of reference (whether immediate or mediate), notions of indication, etc.

In the interrogative mode, the different forms are based only on the relation with which the substantial is combined. This may be illustrated from English, in which *where?*, *whither?* and *whence?* represent combinations of a substantial term in the interrogative mode with the locative (or ending-point), the ending-point, and the starting-point relations respectively. *Where?* may be rendered *whose location is* (or *whose ending-point is*) WHAT PLACE?; *whither?*, *whose ending-point is* WHAT PLACE?; *whence?*, *whose starting-point is* WHAT PLACE? German has a set of pronouns (*worunter?*, *worüber?*, etc.) which express the interrogative substantial plus an indirect locative relation and which may be rendered: *whose location is* (*whose ending-point is*) A POINT *under* WHAT PLACE?, A POINT *over* WHAT PLACE?, etc.

A pronoun of the type of those last named, on the basis of the fact that its referent is denoted through the medium of its relation to something else (a point of reference), may be called a pronoun of mediate reference or a mediate pronoun. On the basis of the fact that its logical content contains two substantial terms it may be called a two-point pronoun. *Where?*, *there*, *whither?*, and all other pronouns of immediate reference logically involving only one substantial term would accordingly be one-point pronouns. *Below*, in e.g. 'He's *below*' (*at* A POINT *below* . . .), and other mediate expressions like it would be two-point pronouns.

In the affirmative mode immediate (one-point) pronouns may be distinguished as indicative and relative.

'Indicative' pronouns may be so called because their meaning includes some type of indication[1], e.g.,

definite:	at, to, from the place	*there*	*thither thence*
indefinite:	" " " a "	*somewhere*	*somewhither*
hypothetical:	" " " any "	*anywhere*	*anywhither*

Demonstrative pronouns, which are special cases of indicative pronouns of definite reference, generally occur in pairs: *here, there; ici, là.* But German and some dialects of English have sets of three: *hier, da, dort; here, there, yonder.* There are languages with still more complicated indicative systems. The different forms in each set are based on differences in remoteness from the speaker, and languages vary in what they consider near enough to be called *here* or remote enough to be called *there* or *yonder.* An adequate treatment of these distinctions is outside the scope of this paper. We shall recognize three degrees of remoteness, of which the third does not often occur in the languages in this study:

this place, point
that place, point
yon place, point

Everywhere is a case of the combination of an indicative locative pronoun with the notion of totality.

Elsewhere, ailleurs, and *anderswo(hin)* express the contradictory indicative notion 'at (to) a place other than . . .'. The contradictory locative is expressed with nouns by the use of *other: at the other, another, some other, any other place.*

A few words may now be said concerning affirmative indicative locative pronouns in each language of this study, separately.

ENGLISH

English has three sets of such pronouns.

1. *here, yonder, there, somewhere, anywhere, everywhere, elsewhere, somewhere else, anywhere else, everywhere else.*

All the above forms can be used with ending-point meaning (i.e., 'whose ending-point is the place, some place, any place,' etc.).

[1] For the term 'indicative', as applied to locutions whose meaning includes some type of indication, we are indebted to Prof. W. E. Collinson. In his monograph on 'Indication', now in preparation, he defines indication as the use of a word or gesture whose function is to direct attention towards or away from an item or items.

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2. In addition, another set essentially includes the ending-point idea. Formerly the only ending-point pronouns, they are now beginning to be archaic:

hither, thither, somewhither, anywhither, everywhither, elsewhither.

Somewhither else, anywhither else have long been obsolete.

3. Starting-point pronouns are *hence, thence,* but the more usual expressions are *from here, from there.*

FRENCH

French has the following affirmative indicative locative and ending-point pronouns (there is no distinction between simple locative and ending-point locative):

ici	*at, to this place*
là	*at, to that place*
y	*at, to the (indicated) place*
quelque part	*at, to some place, any place, a place*
n'importe où, où que ce soit	*at, to any place*
partout	*at, to all places, every place*
autre part, ailleurs	*at, to a place other than . . .*

Là-bas is often equivalent to English *yonder.*

GERMAN

Ending-point forms in standard German are definitely distinct from the merely locative forms, being derived from the latter by the suffixation of *-hin.* This ending-point suffix *-hin* alternates in usage with the ending-point word *hin.* The former is more common in formal written German, the latter in colloquial. Locative forms (i.e. without [-]*hin*) for ending-point are dialectic.

Locative Pronoun	Locative Pronoun which includes Ending-Point Relation	Logical Rendering
hier	*hierher*	*at, to this place*
da	*dahin*	*at, to the (mentioned) place*
dort	*dorthin*	*at, to that place* *at, to yon place*
irgendwo	*irgendwohin*	*at, to any place* *at, to some place*
überall	*überallhin*	*at, to any places* *at, to every place*
anderswo	*anderswohin*	*at, to a place other than . . .*
sonstwo	*sonstwohin*	*at, to any place other than . . .*

The indicative ending-point form *dahin* that should correspond with the middle indicative locative *da* seems to have lost its force as an independent pronoun. *Dorthin* is therefore the independent ending-point form of both *da* and *dort*, as well as the referential form for *dort*.

An indicative pronoun can be regarded as independent or referential. It is 'independent' if it represents something not previously mentioned or not at the moment clearly in mind but whose recollection is being sought, e.g., 'Look at *that*' (with a gesture of pointing). A pronoun is 'referential' if it refers to something previously mentioned, e.g., 'Do you remember the tree where we built a fort as children? Let us go *there* now.'

No formal differentiation between independent and referential functions of indicatives is made in the languages of this study, and such a word as *there* may mean either 'at (to) *the place at which I am pointing*' or 'at (to) *the place referred to*'. Take for instance this situation: A man is sitting in his study reading a book, his back turned toward the door. A knock is heard. The man, raising his eyes from his book, but without turning around, calls, 'Who's *there?*' Is 'there' a referential or an independent form? Does it mean 'at the place that has just come into my consciousness' or merely 'at that place' (implying a substitute behavior for pointing at, a mental pointing at, as it were)? Does 'Who's *there?*' correspond to 'Who is *it?*' or to 'Who's *that?*' Both explanations are possible. In oral speech, the stress and intonation would reveal the type (independent *there* is stressed, referential *there* is relatively unstressed), but these criteria are absent in written forms.

In contrast to immediate indicative pronouns, immediate relative pronouns may now be considered. Relative pronouns are basically, of course, a syntactic specialization, but they have certain characteristics requiring special treatment. They may be broadly classed as simple and compound.

Simple relative pronouns are referential. They refer to an explicit noun and may imply the ending-point relation, e.g., 'Let us live in Paris *where* art and gayety join hands', 'In Paris *where* we're going tomorrow'. Such pronouns have a grammatical relation to only one verb.

Compound relative pronouns are used without any explicit noun. They might well be called 'double pronouns', for they are best considered blends of two pronouns, one independent, the other referential. For example, in 'They live *where* art and gayety join hands', the 'double' locative pronoun *where* can be analyzed into the independent locution

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'in a place' (= the pronoun 'somewhere') plus the referential pronoun 'in which'. The included referential idea may be looked upon as merely referential (as in the analysis just given) or as indicative referential. In the latter case *where* may be taken as a blend of 'a place' and 'there'. For example, 'let's go *where* it's quiet' may be interpreted as 'Let's go to a place'—'It is (may be) quiet *there*.' Of course, roughly the same idea may be expressed in English by 'Let's go to a quiet place', but the relative clause cannot be reduced to a simple modifier in cases like 'Let's go *where* he went.' A 'double pronoun' has a grammatical relation to two verbs. The implied independent idea bears a definite syntactic relation to one verb, and the referential idea bears the same or another syntactic relation to the other verb, as may be seen in the following analysis:

Go	where		the fairies dwell.
	to a place	at which	
	independent element related to 'go'	*referential element related to 'dwell'*	

This twofold relationship is apt to obscure the nature of the 'double pronoun' in respect to its being a one-point or a two-point pronoun, because any linguistic rendering of its logical content cannot escape including two different symbols of a substantial, e.g., *place* and *which*. This does not mean, however, that two different substantials are symbolized. A compound relative pronoun is as truly a one-point pronoun as is a simple relative, i.e., its logical content includes only one substantial; in other words, behind the linguistic *place* and *which* there is only one objective 'point'. The difference between the 'points' underlying the simple and the compound relative is a difference not in number but in kind. The former might be likened to a one-facet 'point', the latter to a two-facet 'point'. The distinguishing characteristics are those already mentioned, namely, the linguistic expression of the one-facet point has a grammatical relation to one verb, that of the two-facet point to two verbs.

The following one-point relative space pronouns are found in our three languages:

	English	French	German
Locative	*where*	*où*	*wo*
	wherever		
	wheresoever[2]		
	anywhere (that)	*où que*	*wo nur, wo auch*
Ending-point plus locative	*where*	*où*	*wohin*
	wherever		
	wheresoever[2]		
	whither[2]		
	whithersoever[2]		
	anywhere (that)	*où que*	*wohin nur, wohin auch*
Starting-point plus locative	*from where*	*d'où*	*woher*
	whence[2]		

Most of the foregoing forms are used also for expressing interrogation. English *anywhere* is used also as an indicative without any relative function, e.g., 'He can go *anywhere*'. Contrast 'He can go *anywhere* he likes' or 'He can go *anywhere that* he likes or 'He can go *wherever* (archaic: *whithersoever*) he likes'.

So far, in the affirmative mode, we have been considering immediate or one-point pronouns. There are also mediate or two-point pronouns, and these may be classed as indicative, elliptic and relative.

The indicatives comprise two-point forms of definite reference, like *thereunder, therewith, darunter, darüber*, etc.

Then there is a type of locution based on the ellipsis of the point of reference after certain locative relaters, e.g., *below* ('He's below', 'He went below'), *above, under*, etc.; these may be called elliptic locative pronouns. This type of pronoun abounds both in English and in French, with the same form for the simple locative and for the locative which includes the ending-point idea, e.g., 'He is *in* now, safe and sound', 'Show the others *in*'. In German there are very few instances of this type of locative pronouns, and they are apt to be limited to the locative relation without implying ending-point, e.g., *oben, unten*. The corresponding ending-point forms are *herauf, hinauf, herunter, hinunter*. As an instance of an elliptic locative pronoun with ending-point implication may be cited *zusammen* in such a context as 'Sie kommen jede Woche für ein Kaffeeklatsch *zusammen* (Every week they come *together* for a good gossip)', i.e., 'to a place occupied by them all'.

[2] Archaic.

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Two-point or mediate relative pronouns are found in English and German. In both languages there are forms which serve both as a simple locative and as a locative plus the ending-point idea: *whereagainst, wherein, whereon, wherethrough, whereunder, whereupon; wodurch, wohinter, woneben, worauf, worüber, worunter, wovor, wozwischen.* There are also exclusive ending-point forms: *whereinto; wohinab, wohinaus, worein.* The starting-point forms are: *wherefrom, wherehence, whereout; woher, woraus.* In German the given forms are constantly used, in English rarely. English prefers *in which, on which,* etc. Thus, although like German it has mediate relative pronouns, its common usage is like French, which is devoid of such and has no choice but to to use a collocation of formally separate linguistic symbols, e.g., *dans lequel (laquelle, lesquelles), sur lequel,* etc.

In the negative mode, the negative, *nowhere,* is closely related to *anywhere,* but does not constitute a separate type of indication. It may be looked upon as a substitute device for negating the entire sentence. This is evident when we remember that 'nowhere' becomes 'anywhere' when the verb is made negative. That is: 'It is done nowhere' = 'It is not done anywhere.' *Nowhere, nirgend(s)wo, nirgend(s)wohin, nulle part = not + at* or *to any place.* The contradictory notion is expressed by *nowhere else, nulle autre part, nirgend(s)wo anders.*

Notes on the English Sample Sentences[3]

E003: *She threw crumbs to the birds. To throw* is an interesting word, parallel to *to send,* e.g., 'He sent a messenger to the king'. *To send* means *to order or cause to go,* with the emphasis on the causing rather than on the going. But the e-p used with *to send* is not the e-p of *the sending,* but that of the locomotion which ensues on the action of sending. *To send to so-and-so* parallels *to order to so-and-so* (e.g., 'He ordered the troops to the capital'), but in the latter case we feel that there is an ellipsis of *to go,* whereas we do not in the former.

There is, however, an important difference in e-p connotation between the *to* of 'He sent a messenger *to* the king' and 'She threw crumbs *to* the birds.' In the former case, there is no special implied relation between 'messenger' and 'king' other than the e-p relation which obtains properly between 'sent' and 'king' and only mediately between 'messenger'and 'king.' In the latter case, however, there is a very special implied

[3] The numbers which are at the head of each note are those which the sample sentences bear in Part II.

relation between 'crumbs' and 'birds', namely the dative or 'giving' relation, expressed by *to* in 'She gave crumbs *to* the birds' and by *for* in 'She threw crumbs *for* the birds.' In other words, the sample sentence E003 is really a blend between two logically distinct sentences: 'She threw crumbs *to* (or *at*) the birds' (where neither *to* nor *at* adequately renders the simple e-p relation) and 'She threw crumbs *for* (or *to*) the birds' (where *for* clearly, and *to* less unambiguously, renders the dative relation). It is a curious fact that with such a verb as *throw* one cannot express the psychologically unmodified e-p relation, but must, wittingly or unwittingly, include a connotation of 'friendly' or 'hostile' attitude ('with intent to give *to* x' or 'with intent to hit x'), hence 'throw *to*' or 'throw *at*.' If we insist on the expression of an unmodified e-p relation in E003, we have to use the clumsy locution 'She threw crumbs *as far as* the birds.'

The correctness of the above analysis, which seems needlessly complicated at first sight, is borne out by two facts: first, that *to send* itself is capable of being used in two slightly different senses—with implication of e-p relation alone, as in 'He sent a messenger *to* the king,' and with implication of dative relation, as in 'He sent tribute *to* the king' (where 'tribute' is not 'caused to go', but is 'caused to be gone with [by a messenger] *for* [the king]'); second, that in sentences with dative implication *to* may be omitted, hence 'He sent the king tribute' and 'She threw the birds what crumbs she had,' but not 'He sent the king a messenger,' unless it is intended to imply that the messenger was not sent to deliver a message *to* him but was rather sent *for* him, that the king might use him as his own messenger (cf. 'He sent the king a cook').

E004: *To bed, you rascals.* Note ellipsis of the verb of motion. 'To bed' for 'go to bed' is not common in English, but sometimes occurs. 'Go to bed' is not the same as 'go to the bed' or even 'go to a bed,' for 'go to bed' implies the conventional sequel 'for the purpose of sleeping'. We might well imagine a child all tucked in to whom its mother says, 'Now close your eyes, Tommy, and go to bed.'

Another matter of interest in 'to bed' is that in this phrase the ending-point relater (*to*) implies a locative relation (*in*), the reverse of the much more usual implication of the ending-point relation by a locative relater. Another instance: 'He put the onion *to* his nose', where *to* can be analysed '*whose ending-point is* A POINT BEFORE'. Cf. Note E155–156.

The logical expansion of the formula '*whose ending-point is*' to '*whose ending-point is* A P LOCATIVELY RELATED TO', of which 'to bed' in

E004 (= '*whose e-p is* A P IN BED') and 'to his nose' (= '*whose e-p is* A P BEFORE HIS NOSE') are rather clear special examples, is possible in a great many other locutions in which a casual examination reveals only a simple e-p relation. 'On *to* Rome!' would ordinarily be analyzed as '(A MOVEMENT) *whose e-p is* ROME', as when one thinks of Rome as the goal of attainment, the climax of a series of ventures. But if one plans to stop at many places in Italy, 'doing' Venice and Milan and Genoa and Rome in conscientious detail, such a phrase as 'On to Rome!' might rather have the connotation of '(A MOVEMENT) *whose e-p is* PP IN ROME'. In this case it becomes impossible to decide definitely between an analysis of 'to' as '*whose e-p is* PP IN' or that of 'Rome' as 'PP IN ROME', for the overtones of contextual implications can never be quite unambiguously allocated to the overt terms of a linguistic expression.

E006: *He went to his death* is an interesting type of transfer. It is a psychological *He went to . . .* blended with a logical *He went and died*, the second event being looked upon as the e-p of the first. The vivid feeling of fatality is due to the reinterpretation of a time sequence as an e-p relation, which is possible here because the first verb is a verb of motion with implied literal e-p (say 'the battlefield'). Schematically:

	A	r	B
	1. He went	*to*	(the battlefield).
and	2. He died	*at*	that place.
contract to	3. He went	*to*	his death.

1 is the syntactic model for 3, but 3 really = 1 + 2. Hence, *his death* is a condensation of 2, which swamps out the implied e-p in 1. We can symbolize this type of metaphor as:

$$A_1\ r_1\ [B_1] + A_2\ [r_2\ B_2] > A_1\ r_1\ B_3$$

A schematically similar example is *He rose to the toast* = *He rose in order to give the toast*, where the e-p element *to* coalesces with the purposive *to* by virtue of a pun-like condensation. Apparently every subsequent act can, by metaphor, become the e-p of a verb of motion, e.g., *He escaped and became a bandit* > *He escaped into banditry*.

E007: *He asked him out to a round of golf.* The expression 'to ask out to' is in a class with 'to invite out to', 'to take out to', 'to have out to' and others as applied to social functions and activities, e.g., a dance, a bridge-party, supper, the opera, etc.

E008: *She has been to confession.* Expressions of this sort (cf. 'I have been to the opera,' 'I have been to town,' 'They've been to Europe')

can only be used in the past, more particularly the perfect tenses. 'I am to the opera' and 'I shall be to the opera' are impossible and 'I was to the opera' is a little strange unless qualified by a definite time reference, e.g., 'I was to the opera yesterday.' The reason seems to be that the locution 'to *be to* x' requires the type of sentence that rather definitely sets off the achieved e-p relation from the logically subsequent locative relation. In other words, the *be to* construction may be looked upon as a condensation of a *go to* and of a *be at* construction.

E011: *Protestant to the backbone.* Note the double transfer or metaphor. First, intensity of quality is rendered, implicitly, in terms of measurable extent. Secondly, this metaphorical extent is conceived in terms of a movement with ending-point, as if to say '*as far as* (or *all the way to*) the backbone'. Thus *to* in the given context may be considered an e-p relater with emphasis on distance traversed. Cf. Notes E012, E014, E087.

E012: *You should know what it is to wear iron to your bone.* 'To wear iron to your bone' is a very subtle expression. The underlying form is that of, e.g., 'to wear wool next to the body' but there is much more than this packed into the 'to' of 'to your bone.' This is due to the fact that, by a somewhat violent ellipsis of both words and meaning, the type 'to wear next to x ' is assimilated to the more expressive type of, e.g., 'it went to his very vitals,' with a frankly e-p term. 'To wear', as such, can have no e-p relation but the cruel pressure of the thing worn is conceived of as moving to an e-p, and it is this overtone which swamps out, with e-p 'to', the more static 'next to' of the normal idiom.

E014: *My throat is cut unto the bone.* This sentence is understandable in two slightly different senses, hence double rendering in column A. (1) 'My throat is cut, having been cut unto the bone', rendered 'a cutting'. (2) 'My throat is with this quality, that it is with a cut unto the bone', rendered 'an extent of cutting'.

E015: *When God had brought me thereunto. Thereunto* illustrates an old property of English, formerly quite important but which now remains only in vestiges. *There* and *here* once combined freely with most prepositions (just as German *da-*, *dort-*, and *hier-*). All compounds of this type that still exist are much restricted in usage or are purely archaic.

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E019: *At dusk he harries the Abazai—at dawn he is into Bonair.* This use of *into* without specific mention of any movement is of course poetical. *Into* carries an implication of motion for the reason that it is definitely an ending-point relater.

E021: *The child walked out into the street.* 'Into the street' and the corresponding 'in the street' are difficult idioms. 'Street' seems to refer to the space between the two sides rather than to the paved surface, and we speak of 'in the given area'. But the analogy between 'street' and 'area' is not complete, for we cannot say 'inside the street' in the same way that we say 'inside the given area'. On the other hand, we sometimes speak of 'on the street', especially in an indefinite sense, as in 'That child is on the street again' (also 'Keep children off the streets'). Again, a building, actually at one side of the street, is said to be 'on so-and-so street' and one lives 'on such and such a street'.

E023: *He dropped the bucket into the well.* The context here would imply the ending-point relation even if the unambiguous relater 'into' had not been used. That is, one could say without ambiguity, 'He dropped the bucket in the well'. It may be pointed out that certain expressions of movement, like 'to go', 'to fall', 'to carry', 'to throw', 'to drop', often suggest the ending-point relation, and the locative relaters are readily used with them to imply the ending-point relation together with the locative relation. Other ideas, like 'to run,' 'to ride', 'to skip', 'to march', do not suggest an ending-point relation, and one has to make use of some expression like *to a point under, over, behind, near,* etc., in order to express the ending-point relation with a locative relation, e.g., 'They are marching to a point near Brussels'.

E024: '*The poor comedian runs into a tree.*' *Into* in this usage may be explained as a means of expressing lack of intention. It is as though one were trying to run to the inside of something when one is suddenly stopped short by the outside of that something. The running up against is therefore unexpected, unintended, sudden. *Runs into a tree,* in other words, may be paraphrased as *runs as though it had been possible to run* (literally) *into a tree.* Cf. Notes E034, E143, E144.

E028: *Up and at them.*
E029: *I looked at him.*
The relater *at* in these and countless other examples ('I threw it *at* him' 'I was talking *at* him, not to him') is peculiarly different from

the simple locative *at* of 'I'm staying *at* the house', 'Meet me *at* the fountain'. It is an e-p relater like *to* and *unto* but with a distinct implication of goal or more or less aggressive purpose. It might almost be considered a blend of the e-p relater *to* and an underlying purposive relater which we may phrase as 'with intent to strike x', 'aimed toward x'. It is curious that the two uses of *at* here defined are so clearly separated from each other by the simple e-p relater *to*. The psychological, as distinct from the linguistic, distribution of the three relaters might be thus schematized:

Simple locative relater	at_1
E-p relater	*to*
Aggressive e-p relater	at_2

Such a configuration suggests strongly that at_1 and at_2 are two distinct 'words'.

E034: *Guess whom I ran against in London the other day.* This is British English. Americans would probably use *to run across*. Both usages are figurative and seem to imply unexpectedness.

E036: *I was rudely thrown upon my back.* 'Upon one's back' is an expression of Position of a particular type and, like all expressions of Position, implies Direction. It may be paraphrased as 'with face directed away from the ground and with back on it'. In the sentence the implied e-p of the movement is the ground, but the expressed e-p is that of position away from the ground. Such expressions as 'on (upon) one's back, face, feet, hands, side' are an interesting group of positional e-p locutions in which the position which characterizes the implied e-p is somewhat metaphorically expressed by considering the individual as resting *on*, or weighing down *upon*, a part of himself, namely, that part of himself which is actually on the ground or other surface. There is here, in *on*, a sort of blend of 'body on the back (face, etc.)' and 'back (face, etc.) on . . . ' The positional e-p relation of the type illustrated in E036 may be schematized as:

A r B

A MOVEMENT *whose e-p is* { e-P: A POSITION WITH REMAINING PORTION OF BODY ABOVE X
e-p: A POINT ON . . .

where x = 'face, back, side, etc.' and . . . = 'surface, ground, bed, etc.' Cf. Notes E109, E111.

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E044: *Lay it across the entrance.*

E045: *I jumped right on to the ice, and how I got across I don't know.*

Note that these two sentences illustrate two different meanings of *across*. In the second sentence *across* connotes two points or lines or areas which are separated by an area. In the first sentence *across* connotes two areas which are separated by a bounding line (in this case 'the entrance' conceived as a line, 'the threshold'). Schematically:

$$\text{E045} \quad \left\{ \begin{matrix} \text{A} & \longrightarrow & \text{B} \\ \text{.} & \text{across to} & \text{.} \end{matrix} \right\}$$

$$\text{E044} \quad \text{A} \left\{ \begin{matrix} \text{across} \\ \text{—|→} \end{matrix} \right\} \text{B}$$

The psychological intuition which leads to the use of the same word (*across*) for two such distinct relational concepts is obviously that of movement through the abstract geometrical configuration of two like elements (dis)connected by a third unlike element: e.g., two points (dis)connected by a line drawn from one to the other; two areas (dis)-connected by a line held in common; two land-masses (dis)connected by water; two intelligences (dis)connected by non-intelligent spaces, hence 'I got it *across* to him.'

E047: *The naked hulk alongside came.* The meaning of *alongside* is dependent upon the context. In such instances as the given sample it expresses 'a position lengthwise of' something, in other words 'side by side with'. But it can mean merely 'near' or 'by the side of', as in 'With his dog *alongside of* him, he read by the hour.' Here, as likely as not, the dog may be facing the side of the master. Contrast German *langseit*, which is etymologically the same as *alongside*, but which expresses, irrespective of context, 'a position lengthwise of' something, as in sample G077, 'Unser Boot legte sich *langseit* dem englischen Dampfer.' French characteristically expresses 'to go alongside' by means of a verb, e.g., 'Notre navire *a accosté* le vapeur anglais'.

It may be noted that in our three languages the 'alongside' idea seems to refer both to the side of the object referred to in the movement, denoting its position when it reaches the ending-point of the movement, and also to the side of that which is the ending-point and by reference to which its location is indicated. 'Alongside' (Ger., 'langseit'; Fr., the 'côté' idea in 'accoster') is a brief way of saying 'in a side-long (lengthwise) position at points by the side of'. 'Alongside' is predicated of one object in relation to another. If both objects were spoken of, they would be described as 'side by side'.

E051: *Advertised by two Symerons, whom he sent before.* *Before* may be either a temporal or a spatial relater. In this sentence it is probably intended to be spatial.

E068: *He put it just outside the door.* *Outside* may be used in three ways:

He put it outside the house.
He put it outside the walls of the house.
He put it outside the door, the window.

That is, *outside* may be used in connection with a container, its bounding walls, or any opening in the walls.

E080: *They sailed off to the south.*
E081: *Turn to the east.*
E081a: *Then Coyote went off west of the mountains.*

Of these samples, E081a might have been equally well classed under section 5.a (see Part I, English), for such locutions as *west of* and *south of* are felt rather as units than strictly as 'of' forms, with expressed points of reference, of WEST and SOUTH. The reason for this will become clear in a moment.

In E081 starting-point and ending-point are identical as to location but are oppositely characterized as to position. One turns from . . . , characterized positionally as 'facing the west (or other cardinal point but east) of your location' to the same . . . , characterized as 'facing the east of your location.' We have here a distinctive type of positional e-p (or of e-P) relation, which we may term the 'reflexive ending-point relation'. Other samples are 'He turned *around*' and G075: 'Er kehrte den Stein *herum*.'

Cardinal point relations are very troublesome in English. This is because the fundamental terms are used in at least four measurably distinct relational senses: 1, locative, e.g., 'He's working (down) *east*', i.e., 'at a p reached by moving in an eastward direction from . . .'; 2, ending-point, e.g., 'He went (down) *east*', i.e., 'he made A MOVEMENT *whose ending-point is* A POINT EAST OF HIS STARTING-POINT'; 3, directional, e.g., 'He walked *east*', i.e., 'eastward, in an easterly direction'; 4, positional, including reflexive ending-point, e.g., 'He faced *east*', i.e., 'He was in the position of having his face to the east', and 'He turned *east*', i.e., 'He turned so as to be in the position of having his face to the east'. From these relations are abstracted, further, a noun *east, the east*, which can only be used in the sense of 'that part of a whole which is characterized by being in an easterly direction from the rest', e.g., 'He

lives in *the east* of Chicago', whereas, if *east* were a true locative to begin with, we should say 'He lives *east* in Chicago' (like 'He lives *there* in Chicago', 'He lives *up town* in Chicago'); if it were a true non-partitive noun of location, like *region* (in some uses), *place*, we should say 'He lives *in the east* in Chicago' (like 'He lives *in that place* in Chicago'). Clearly, the cardinal point terms are only linguistically primary, not psychologically and logically so. They symbolize fundamentally directional concepts, hence such terms as *eastward* and *to the east of*, linguistically secondary though they be, are logically prior to *east* itself.

When used with points of reference, the simple formula of adding 'of' cannot be safely applied in all cases, hence 'east of' gets to be felt as another kind of unit than 'out of' or 'close to' in their relation to 'out' and 'close'. The following table will help to make this clear:

	Without point of reference	*With point of reference*
Direction	(to walk) east; eastward; toward the east; in an easterly (eastward) direction	to the east of x; in an easterly (eastward) direction from x
Ending-Point	(to go) east; to the east; (down, back) east	out east of x
Position	(to face) east; in an easterly (eastward) direction	east of x; in an easterly (eastward) direction from . . .
Reflexive ending-point	(to turn) east;[4] to the east	
Location	(to stay) east; out (down, back) east; in the east	east of x

E082: *We went out of the room and waited there for poor Tommy.* *Out of* is generally a starting-point expression, but sometimes, as in this case, it may be interpreted as an ending-point relater meaning *to a point at no great distance from.*

E086: *Pull up your chairs.*

E087: *He walked up to the parson.*

The *up* of these sentences has the function of adding to the basic e-p notion that of increasing nearness, e.g., 'He walked progressively nearer to the parson'. This complex notion is not dissimilar to that of e-p

[4] 'To turn east' may also mean 'to change one's direction eastward while moving'. Cf. terms for *Direction*.

with reference to extent covered, as in German *bis* and French *jusque* (*jusqu'à*) but is not identical with it. Periphrases like *as far as* and *all the way to* must be used in that case. The spatial *up to* is not a true unit but is to be analyzed as *up* + *to*. In other words, 'He walked *up to* x' is properly 'He walked progressively nearer to x + (he walked) to x'. But when *up to* is applied to time, it becomes the equivalent of *till, until* and *bis, jusqu'à*.

E090: *She folded her work and laid it away.* *Away* generally means 'to any place other than the starting-point or the point of reference.' In speaking of 'putting' things *away* there is an added connotation of putting them in the appropriate places for storing or keeping.

E094: *Take the gentleman up front to a better seat.* Without context and without speech intonation, this sentence is ambiguous. It might mean either 'Take the gentleman who is up front to a better seat' or 'Take the gentleman to a place up front, to a better seat.'

E097: *I'm going down to Tucson.* This use of *down* illustrates a whole series of curious adverbial usages in English involving *out, up, down, over*, and possibly others, in other than their literal meanings. Without attempting to explain the details of the usage, we cite a few examples:

over there
I'm going *out* to San Francisco.
down to London town
out west, *up* north, *down* south, *down* east (note also *back* east)
down on the farm
out on the open sea
*up*state, *down*state
*up*town, *down*town
up (*down*) to the corner
over to the Joneses
pacing *up* and *down*

The use of such expressions presents a complicated problem. It varies markedly in different parts of the English-speaking world, so that rules of usage would have to be restricted as to locality. The following remarks on the use of *up* and *down* may prove suggestive of the considerations involved. Elevation, when clearly evident, as when marked by mountain slopes or the direction of rivers, is certainly a factor, e.g., *down to New Orleans, up to Duluth.* The more important or larger place is likely to be honored with the *up*, e.g., *up to Chicago, down to Springfield.* The older part of town is *down*, the newer *up*.

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Map directions often seem to be the determining factor, *north* being *up*, *south* being *down*, e.g., *up to Seattle, down to San Francisco.*

Perhaps the most interesting thing about these expressions, to which *right* may be added, is that they seem to map out a space-configuration involving psychological distance. *Right* is nearest the speaker or point of interest, *over* a little farther away, *up* and *down* are moderately distant, and *out* is farthest away. Note:

1	*2*	*3*	*4*
It's *right* there where you are. (Speaker thinks of 'you' as point of departure.)	It's *over* there. (E.g., at the house, not distant, you and I being here in the field.)	It's *up* there at the house. (House is psychologically more distant than in 2.) It's down there by the mill. (More of a walk suggested than in 'It's *over* there by the mill'.)	It's *out* there somewhere. (Suggests considerable labor to get at.)
Take this road and you're *right* in New York.	I live in New Haven, but when I want to do any important shopping I just run *over* to New York.	Even Philadelphians frequently run *up* to New York. It isn't so much of a trip from Albany *down* to New York.	It isn't often a Californian manages to take a trip *out* to New York.

Up town and *down town* are expressions in every-day use by English-speaking people in many localities. There is no French equivalent. Except in hill towns, such as Carcassonne and Quebec, where there is a *ville haute* and *ville basse*, the usual expression corresponding to our down-town is *en ville*, which refers to the business, amusement, shopping or other section in contradistinction to *chez soi*. When a Parisian returns from *en ville* he has no such 'blanket' expression as our *up town*. He must express with more precision where he is going: 'Je vais remonter chez moi', 'Je vais rentrer (I am returning home)', 'Je rentre à Vaugirard', 'Je remonte à Monmartre'. He uses *remonter* for going to the residential district, even though he does not go *up* any more than we do when we go *up* town. A Frenchman residing in New York adopts the English turn of thought in saying '*Je vais dans le haut de la ville, dans le bas de la ville*'.

The nearest French equivalent to *out* is found in the *en* of 'Je m'*en* vais.....'. In 'Je m'*en* vais à Paris' the mental set is that of a person starting *out from his present location* on a trip *whose ending-point is Paris*.

E101: *Down with your sails.* The English '*Down* with your sails!' would be expressed in French by 'Abaissez les voiles!' the verb being used to denote a direction. The French expression '*à bas* x' has a feeling-tone of scorn or hatred when addressed to or used for apostrophizing persons: '*A bas* les rois! (*Down* with kings!)' It is a proper command for animals, however, and contains only the implication of sternness. '*A bas* les pattes! (*Get* your paws *down*!)'. The German '*Herunter* damit!' has the same feeling-tone as the English '*Down* with it!' but is like the French in that the forms *herunter* and *à bas* cannot be used purely locatively.

E109: *Turn him over on his face.*
E110: *She ..... turned about to hide her face.*
Over in 'to turn over' and *about* in 'to turn about' may both be translated 'to a position facing in the opposite direction from that of the previous position', but *over* refers to turning on a horizontal axis, *about* to turning on a vertical axis.

In E109 the e-p is characterized by two positional expressions—a dynamic one, *over*, which defines the changing, and resultingly changed, position, and a static one, *on his face*, which defines, in the manner explained in note E036, the changed position. Such phrases as 'over on his face', therefore, are conceptually parallel, for position, to such e-p and locative terms as 'into', for location.

E111: *Sit up and pay attention.* When the location (ending-point) is thought of as united with the particular 'stasis' which results from a characteristic *movement* into a characteristic locatively determined *being*, we have 'position'. Position is not a type of location but is a more complex type of entity, involving or implying location, frequently ending-point of preceding movement. In actual usage position and ending-point get blended. Sometimes the ending-point implication is clearer, sometimes the position ('directional result') is clearer. In 'He sat down on the chair' (cf. G019), ending-point is clearly expressed; in 'He sat down', position is clearer and involves ending-point only by further implication *within* position-implication. The result, involving both position and ending-point, of the movement is 'a sitting position on . . .'. In 'He stood up', 'up' is position-result, not strictly ending-point, but further implies ending-point '*on* . . . (a horizontal surface)'. Perhaps the most logical formula for expressing (in column B) both position and ending-point would be '. . . (*or* a point on . . .), at which a ..... position', but this is a bit clumsy, and so the simpler formula has been

adopted 'a ..... position at (on) . . .'. In the case of 'He sat down', the renderings according to the two formulae would be: '(a point on . . ., at which) a sitting position', 'a sitting position (on . . .)'.

E120: *Go whither you will.* The relative pronoun may be considered a blend of two pronouns, one going with each clause. Thus, 'Go whither you will' may be taken as a blend of 'You want to go *somewhere*' and 'Go *there*'.

E124: *Give it here.* This colloquial expression seems to blend the notions of, say, 'Give it to me' and 'Bring it here'.

E134: *You will go nowhere, I tell you.* The negative pronoun is really only a substitute device for negating the sentence as a whole. 'You will go nowhere' means 'You will not go anywhere'. The suggested analysis of the sample follows English linguistic usage rather closely. We can redistribute the negative and possibility terms and then the analysis becomes:

a possible movement	*not (r)*	*a possible place*
any movement		*any place*

E137: *Wherever I go I find the same sadness. Wherever*, the relative pronoun corresponding to *anywhere*, is used in this sample as a locative pronoun dependent on 'find' and as an ending-point pronoun dependent on 'go'. The sample may be reworded: 'I find the same sadness in any (= all the) places to which I go.' (Cf. Appendix, Table II, section G.)

E138: *You look like you're going places.*

E139: *All dressed up and no place to go.*

'To go places' is colloquial and restricted to this sort of application, where it is the opposite of 'to go no place'. *Places* acts as a plural to *some place*. The first sample would be expressed in more refined usage by 'You appear to be going somewhere'.

E143: *I came upon a flower.* The expression *to come upon* has some interesting implications. Bundled into this simple quasi-metaphorical expression are the ideas (1) that the e-p was not purposed, for if that particular e-p were intended, we should use the verb *to go*: 'He went to a flower'; (2) that the total movement did not stop there, for to indicate that the e-p is final, we should use *to*: 'He came to a flower'. We should hardly say 'He came upon the well he had been making for.' On the basis of distinction as to whether or not the e-p is final and whether or not it is purposed, we get the following four types:

purposive, conclusive: *He went to John.*
non-purposive, conclusive: (*In his journeying*) *he came to John.*
purposive, non-conclusive: *He dropped in on John.*
non-purposive, non-conclusive: *He came upon John.*
On the analogy of *to come upon*, evidently, appear synonymous expressions that do not even have a verb of motion, e.g., *to chance upon, to happen upon.*

E144: *We came across an old deserted cottage.* 'To come across' is the modern expression corresponding to the more archaic 'to come upon'. See note E143.

E155: *She had put the baby to bed and now sat reading a book.*
E156: *He put the onion to his nose.*
'To put' is one of those verbs which refer to the ending phase of a moving, and to the movement largely by implication; it might be paraphrased 'to finish moving something somewhere'. Nevertheless it often requires an ending-point relater to complete its meaning. Cf. Note E004.

E158: *Stand it in the corner.* Part of the meaning of 'to stand' defines the position of the object after it has reached the ending-point of its movement. Many other verbs have an implication of position, e.g., 'to erect', 'to lay', 'to seat'.

APPENDIX

TABLE I

COMPARATIVE TABLE OF CONTENTS OF PARTS I AND II

[*E = English. F = French. G = German.*]

	Page No. in Part I	Sample Number	Page No. in Part II
1 (EFG) Predicative expressions of the ending-point relation.	15 22 14, 26	E001 F001 G001	36 48 54
2 (EFG) Usual e-p relaters (occasionally with implication of additional concepts).			
to, unto.	15	E002–015	36
à, jusque.	22	F002–010	48
zu, nach.	26	G002–008	54
3 (EG) Ending-point relaters which always or usually include emphasis on distance traversed.			
as far as, all the way to.	15	E016–017	37
bis.	26	G009–012	55
4 (E) Ending-point relater in combination with locative relaters, *into, onto.*	15	E018–027	37
5 (EFG) Relational locative expressions which may imply ending-point relation.	15 22 26		
5.a (EF) Those which require an explicit point of reference in the second term. (*Prepositions.*)	16 22	E028–037 F011–018	38 49

TABLE I—continued

[*E* = *English*. *F* = *French*. *G* = *German*.]

	Page No. in Part I	Sample Number	Page No. in Part II
5.a-1 (G) Those which with the accusative express both the ending-point and a locative relation, and with the dative express only a locative relation. (*Prepositions.*)	26	G013–032	55
5.a-2 (G) Same forms as 5.a-1 suffixed to 'da-' and 'wo-'. (The resulting combinations constitute interrogative, indicative, or relative pronouns of space location. If treated as a whole, they would be classed under section 10.b.)	27	G033–049	56
5.a-3 (G) Those which are construed with the genitive, dative, or accusative. (*Prepositions.*)	27	G050–060	57
5.b (E) Those which may be used 1, with or 2, without a point of reference, without change of form. (1, *Prepositions;* 2, *elliptic locative pronouns.*)	16	E038–077	38
5.c (EF) Those which have different forms when used 1, with or 2, without a point of reference. (1, *Prepositions and prepositional phrases;* 2, *elliptic locative pronouns.*)	17 22	E078–093 F019–041	41 49

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TABLE I—continued

[*E* = *English*. *F* = *French*. *G* = *German*.]

	Page No. in Part I	Sample Number	Page No. in Part II
5.d (EG) Those which do not ordinarily or ever take an explicit point of reference. (*Elliptic locative pronouns.*)	17 27	E094–096 G061–063	42 58
6 (F) Prefixes which sometimes express the ending-point relation. (The given combinations of prefix plus stem if treated as a whole would be classed under section 12.)	22 27	F042–066	51
7 (EG) Locutions which consist of or include some expression of direction and which may imply ending-point relation.			
about, down, out, over, up, alone or as first member of a combination.	18	E097–111	42
her- and *hin-* plus *-ab, -auf, -aus, -über, -unter; her-* plus *-vor, -um; zurück.*	28	G064–076	58
8 (EFG) Locutions which express position irrespective of context and which may imply ending-point relation.	18 23 28	E112–115 F067–068 G077–079	43 53 59
9 (G) Indicative space-locative pronouns which include the ending-point idea: composed of *her* or *hin* (as indicative ending-point locative pronoun) alone, or plus *-an, -bei, -ein* (*-in*), *-vor, -zu, -zwischen,* or plus a stem which expresses a motion.	28	G080–094	60

TABLE I—concluded

[*E = English. F = French. G = German.*]

	Page No. in Part I	Sample Number	Page No. in Part II
10 (EFG) Space-locative pronouns: interrogative, indicative and relative.	19		
10.a (EG) Those which essentially include the ending-point idea.			
whither, hither, thither.	19	E116–121	44
her or *hin* (as ending-point relater) suffixed to or following a locative pronoun: *hier* + *her* or *hin*; *wo, da, dort, überall, irgendwo,* etc., + *hin.*	28	G095–108	61
10.b (EF) Those which may imply ending-point relation. (For G, cf. 5.a-2.)	19 23	E122–137 F069–079	44 53
11 (EG) Stray words which may imply ending-point relation.			
places, no place, home, abroad.	19	E138–142	45
heim.	29	G109–111	61
12 (EFG) Combinations of the ending-point relation with the first term of the relation and often also with other concepts. (*Verbs, nouns, adjectives.*) (Cf. 6.)	19 24 29	E143–195 F080–090 G112–138	45 53 62

[p. 88 blank in the original]

TABLE II

SUMMARY OF CLASSES OF RESTRICTIVE LOCUTIONS WHICH DENOTE THE ENDING-POINT RELATION, EXPLICITLY OR IMPLICITLY, IN THE ENGLISH, FRENCH AND GERMAN SAMPLE SENTENCES

By Alice V. Morris

INDEX

(A) Expressions of e-p relation unaccompanied by psychological emphasis, by other relations, or by pronominal concepts.	cl 01	He rode *to* CHESTER.
	cl 02	On *to* ROME!
(B) Expressions of e-p relation with psychological emphasis on a particular feature of the total situation:		
(B.1) With emphasis on distance traversed.	cl 03	He went *as far as* the WALL.
(B.2) With emphasis on aggressive purpose.	cl 04	He threw a stone *at* the CALF.
	cl 05	*At* IT!
(B.3) With emphasis on unexpectedness.	cl 06	He ran *across* MR. SMITH to-day.
(C) Expressions or implications of e-p relation in combination with a locative relation.	cl 07.a	The bucket fell *into* the WELL.
	cl 07.b	He went *to* BED.
	cl 07.c	He put the kicker *in* HARNESS.

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	cl 08.a	At dusk he harries the Abazai, at dawn he is *into* BONAIR.
	cl 08.b	*To* BED, you rascals!
	cl 09	They were shown *in*.
	cl 10	*Out* with you!
(D) Expressions or implications of e-p relation in combination with a from-ward directive relation.	cl 11.a	He is going *out to* TUCSON.
	cl 11.b	He is going *down* TOWN.
	cl 12.a	Er ging *hinunter*.
	cl 12.b	He went *down* to greet her.
	cl 13.a	*Herunter* damit!
	cl 13.b	*Down* with your sails!
(E) Implications of e-p relation in expressions of position.	cl 14	He put them *upside down on* the TABLE.
	cl 15	Sit *up* and pay attention!
	cl 16	Our ship came *alongside* the English STEAMER.
	cl 17	The naked hulk *alongside* came.
(F) Expressions or implications of e-p relation in interrogative and indicative pronouns of space-location.	cl 18.a	*Thither* he went.
	cl 18.b	He went *there* at noon.
	cl 19.a	*Whither* away?
	cl 19.b	*There*, you fool!
	cl 20.a	Let them which are in Judaea flee.....and let not them that are in the countries enter *thereinto*.
	cl 20.b	I have *hereunto* set my hand and seal.
	cl 20.c	He strode forward and sat *thereon*.
	cl 21.a	*Herein*, gefälligst!
	cl 21.b	*In here?*

(G) Expressions or implications of e-p relation in relative pronouns of space-location.	cl 22.a	The feast *whereto* he hastened was provided by the king.
	cl 22.b	She followed on to the place *where* he had gone.
	cl 23	The tome was still on the table *whereon* he had laid it.
	cl 24	He wandered he knew not *whither*.
	cl 25.a	He went *whither* she had gone.
	cl 25.b	He went *where* she had gone.
	cl 26	He went *where* it is quiet.
	cl 27	*Wherever* he paddled he found plenty of bass.
(H) Implications of e-p relation in stray words.	cl 28	He went HOME.

EXPLANATORY REMARKS

Table II is based on a survey of the samples of restrictive[1] ending-point locutions in Part II, but differs in details of classification and presentation. In Part II samples are often grouped primarily according to linguistic form and there is considerable variety in the method of grouping in the different languages. Samples are given ahead of analyses and without any special limitation as to number. Table II is an attempt to summarize and classify the types of restrictive ending-point locutions primarily according to the nature and number of logical concepts which they denote, explicitly or implicitly. For each type a formula is given first, followed by the minimum amount of illustration needed to show whether and how each type is expressed in each of the three languages of the study.

In Table II the ending-point locutions are grouped in eight main divisions (A-H). Each division is composed of from one to six classes, twenty-eight in all. Classes are subdivided when it is necessary to show, for the same conceptual combinations, types of locutions marked by a

[1] See Part I, page 12.

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difference in the kinds of elements which they express or imply. For example, in '*Whereto* do you hasten?' and 'Are you going *somewhere*?', *whereto* and *somewhere* are conceptually of the same class, namely, a combination of the ending-point relation with a questioned or indicated place, object or person. But the class is subdivided linguistically, because in *whereto* both the relational and substantial ideas are expressed (cl 18.a), whereas in *somewhere* an indicated place is alone expressed and the ending-point relation is only implied (cl 18.b).

Another and less fundamental difference in the linguistic symbolization of like conceptual combinations is merely a matter of outward appearance, as in *thither, whereto?* and *jusqu'où*? In all three of these locutions the concepts of ending-point relation and an indicated or questioned place are both expressed, but in *thither* by an inseparable linguistic blend, in *whereto* by a collocation of two separable elements with the ending-point element last, and in *jusqu'où* by a like collocation but with the ending-point element first. This kind of difference is noted in the annotations.

With combinations which are expressed by blends wherein the different concepts are linguistically inseparable, any attempt to show schematically the correspondence between linguistic form and conceptual elements is confronted by a delicate problem, namely: should a relation which is included in the meaning of the 'blend' be considered to be expressed or implied and therefore pictured as free or as enclosed within parentheses? In connection with locative pronouns this question frequently occurs concerning ending-point and locative relations. In answer, the following procedure has been adopted: for words which always include the ending-point idea and can never be used merely locatively, the ending-point element is left without parentheses both in the test formula and in the English rendering, e.g., Eng. *whither, hither, thither*, Ger. *her, hin*, with meaning given as *whose e-p is what, this, that place;* and for words which can be used merely locatively, locative relations are left without parentheses and ending-point elements are placed within them, e.g., 'Let's go *where* it's quiet' with meaning of *where* given as (*whose e-p is*) *a place in which.*

In reading the table it will be a help to remember that every numbered class differs from every other in the *nature of its conceptual content* as represented by italicized symbols in columns A, r, B, and that all subdivisions (a, b, c,) of the same numbered class are identical in the nature of their conceptual content and therefore have identical italicized symbols, but differ in *linguistic expression* and therefore differ in the parenthesizing of their symbols.

NATURE OF CONTENTS OF COLUMNS

First column: A, First term of relation between A and B.

Second column: e-p r or loc r, The ending-point relation (cl 01–26, 28) or a locative relation (cl 27) between A and B.

Third column: B, A generalization of the linguistic expression of second term of relation between A and B.

In classes other than those of relative pronouns column B is subdivided into three flutings:

(1) ENDING-POINT, the ending-point of A and often also the logical first term of a relation to another substantial either expressed or implied (B POINT OF REFERENCE);

(2) r, locative, directive or e-p relation between B ENDING-POINT and B POINT OF REFERENCE;

(3) POINT OF REFERENCE, any existent by reference to which the ending-point is located.

In classes of relative pronouns (division G) column B is not subdivided. It is provided with descriptive headings for different groups of entries.

Fourth column: S, Sample sentence in English (E), French (F), and German (G). The sentences are selected from such only as depict a motion. The formulae are equally applicable to locutions found in sentences which depict a stationary existent or an extent of space or time conceived of as having an ending-point.

Fifth column: English rendering of instance of A, e-p r, B. Liberty has been exercised in rendering an implied first term (A) on the basis of a supposed context. Other contexts would supply as many other renderings.

Sixth column: References, Annotations. References apply to Parts I, II and III, abbreviated 'I', 'II', and 'III', respectively. The letters E, F, G stand for English, French and German. Section numbers in Parts I and II are enclosed within parentheses; sample sentences are referred to by their number without parentheses.

Opposite the headings of lettered divisions are given references which have a bearing on the entire division. The sections thus referred to for Part II include all or the bulk of examples of any class within the division.

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Illustrations in Part II, for each class other than in divisions E, F and G, are first to be sought in the sections referred to opposite the division heading or class formula. Then may be sought the given isolated samples. These include all relevant samples not contained in the referred-to sections.

For classes in divisions E, F and G, references to Part II cover all relevant samples both within and apart from sections cited.

Occasional annotations call attention to items of interest.

Abbreviations and Conventions

SMALL CAPITAL LETTERS — are often used to indicate the ending-point or the point of reference.

cl 'class'

e-p 'ending-point'

dir 'directive'

Gnl Rmks 'General Remarks'

ind'd 'indicated'

italics are used in the sample sentence to mark the locution being illustrated, and in the formula (columns A, e-p r, B) and the English rendering to mark the corresponding meaning.

loc 'locative'

M 'a motion'. M represents any kind of motion, including 'movement', 'moving', 'action impelling or inducing a movement', etc. (See Part II, Explanatory Remarks, page 32 ff.)

obj 'object'

p 'point', 'place', 'points', 'places', 'successive points, places' or any convenient synonym

P 'position', 'positions', 'successive positions'

pers 'person'

pl 'place'

qst'd 'questioned'

r 'relation'

. . . 'so and so', 'such and such'. Term to be supplied from context. Three large dots form part of the interpretation of the locution which is italicised in the sample. In Table II they represent an implied point of reference.

$\sim$ represents a subordinate verb or proposition. The symbol $\sim$ may be read in various ways. In the analysis of 'Go *whither* he went ' ('M *e-p r place to which* $\sim$'), $\sim$ may be read in the specific words of the text as 'he went'. In the analysis of the subordinate clause '*whereto* we hasten' ('$\sim$ *e-p r which*'), $\sim$ may be read as a reified verb, either 'a hastening', or, more generalized, 'a movement'.

( ) Parentheses in a formula or an English rendering enclose an implication, such as may be found, for example, in '*To* bed, you rascals!' where *to* masks an implied movement and an implied point in bed, and the implications are placed within parentheses, thus: '*(M) e-p r (p) (loc r)* POINT OF REFERENCE'; '*(Go) to (a place) (in)* BED!'

[ ] Square brackets which enclose entire sentences in the columns 'Sample sentence' and 'English rendering' indicate that such bracketed illustrations belong to a class similar to but not in every way identical with the class given in columns A, e-p r, B. Square brackets are also used for minor services in order to avoid confusion which might result from a more liberal use of curved parentheses instead of reserving the latter almost exclusively to indicate conceptual implications.

TABLE II

Note that the table runs across two pages. Each lettered division and each numbered class must be read across both pages.

	A	e-p r	B			S
			Second term of relation			
	First term of relation	End-ing-point rela-tion	ENDING-POINT	r	POINT OF REFERENCE	Sample sentence
(A)	*Expressions of e-p relation unaccompanied by psychological emphasis, by other relations, or by pronominal concepts.*					
cl 01	M	*e-p r*	ENDING-POINT			E1 He rode *to* CHESTER. E2 So Joshua sent messengers, and they ran *unto* the TENT. F1 J'ai voyagé *à* ROME. F2 Apportez-les *jusqu'*-ICI, s'il vous plaît. G1 Er geht *zur* SCHULE. G2 Wo gehen Sie *hin*? G3 Ich gehe *nach* der STADT.
cl 02	(*M*)	*e-p r*	ENDING-POINT			E On *to* ROME! F *A* la GARE! G1 *Zur* STADT! G2 *Nach* BERLIN!

TABLE II

		English rendering of instance of A, e-p r, B	References Annotations
(A)			I & II, Gnl Rmks; EFG (2), F (6), G (10. a).
cl 01	E1	A riding *whose e-p is* CHESTER.	III, E003, 006, 007, 008.
	E2	A running *whose e-p is* the TENT.	
	F1	A trip *whose e-p is* ROME.	
	F2	A commanded bringing *whose e-p is* THIS PLACE.	
	G1	A going *whose e-p is* SCHOOL.	
	G2	A going *whose e-p is* WHAT PLACE?	
	G3	A going *whose e-p is* the CITY.	
cl 02	E	(*A commanded movement*) *whose e-p is* ROME.	II, F003; III, E004.
	F	(*A commanded movement*) *whose e-p is* the STATION.	
	G1	(*A commanded movement*) *whose e-p is* the CITY.	
	G2	(*An announced movement*) *whose e-p is* BERLIN. [= (*All aboard. The train is about to move on*) *to* BERLIN.]	

TABLE II—*Continued*

	A	e-p r	B			S
	First term of relation	End-ing-point rela-tion	Second term of relation			Sample sentence
			ENDING-POINT	r	POINT OF REFERENCE	

(B) *Expressions of e-p relation with psychological emphasis on a particular feature of the total situation:*

(B. 1) *With emphasis on distance traversed.*

cl 03	M	*e-p r with emphasis on distance traversed* ENDING-POINT	E1	*As far as* [*up to*] HERE the tourists may come, but no further.
			E2	I went *all the way to* the WALL.
			F1	*Jusqu'*ICI on est permis de venir, mais pas plus loin.
			F2	Je suis allé *jusqu'*au MUR.
			G1	*Bis* HIER*her* darf man kommen, aber nicht weiter.
			G2	Ich ging *bis an* die MAUER.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(B)			
(B. 1)			I, E(3), F Gnl Rmks, G(3); II, EG(3).
cl 03	E1	A movement *whose e-p, with emphasis on distance traversed, is* HERE.	II, F007-10; III, E011-12, 015, 086–7.
	E2	A movement *whose e-p, with emphasis on distance traversed, is* the WALL.	*As far as* denotes, irrespective of context, the relation of e-p with emphasis on distance traversed. The meaning of *up to* depends on context. Cf. E087.
	F1	Same as E1.	
	F2	Same as E2.	
	G1	Same as E1.	
	G2	Same as E2.	

TABLE II—*Continued*

	A	e-p r	B			S
	First term of relation	End-ing-point relation	Second term of relation			Sample sentence
			ENDING-POINT	r	POINT OF REFERENCE	

(B. 2) *With emphasis on aggressive purpose.*

cl 04	M	*e-p-r with emphasis on aggressive purpose* ENDING-POINT	E	He picked up a stone and threw it *at* the CALF.
			F1	Il a jeté une pierre *au* VEAU.
			F2	On a tiré *sur* LUI.
			G	Er warf den Stein *nach* dem KALB.
cl 05	(*M*)	*e-p r with emphasis on aggressive purpose* ENDING-POINT	E	*At* IT!
			F1	*Au* VOLEUR!
			F2	[Allez-*y*!]
			G	Dr*auf* los!

(B. 3) *With emphasis on unexpectedness.*

cl 06	M	*e-p r with emphasis on unexpectedness* ENDING-POINT	E	Guess WHOM I came *across, upon.* [to run *across, against, into;* to turn *up.*]
			F1	Donner *dans* le PANNEAU.
			F2	Je tombai *sur* d'AUTRES MATIÈRES.
			G	*Auf* eine SACHE stossen.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(B. 2)			III, E028–9.
cl 04	E	A throwing *whose aggressively intended e-p is* the CALF.	II, E029, 035.
	F1	Ditto.	
	F2	A shooting *whose aggressively intended e-p is* HE.	
	G	Same as E.	
cl 05	E	(*A movement*) *whose aggressively intended e-p is* IT.	II, E028, F002
	F1	(*A movement*) *whose aggressively intended e-p is* the ROBBER.	
	F2	[A movement (*whose aggressively intended e-p is*) IT.]	
	G	Same as E.	
(B. 3)			
cl 06	E	A movement *whose unexpected e-p is* WHO.	II, E024, 034, 143–4, 186; III, E024, 034, 143–4.
	F1	A movement *whose unexpected e-p is* a SNARE.	
	F2	A movement *whose unexpected e-p is* OTHER THINGS. [fig.]	
	G	A movement *whose unexpected e-p is* SOMETHING [literal or fig.].	

TABLE II—*Continued*

	A	e-p r	B			S
			Second term of relation			
	First term of relation	Ending-point relation	ENDING-POINT	r	POINT OF REFERENCE	Sample sentence
(C) *Expressions or implications of e-p relation in combination with a locative relation.*						
cl 07. a	M	*e-p r*	(*p*)	*loc r*	POINT OF REFERENCE	E He dropped the bucket *into* the WELL.
						F Il est monté *jusque sur* les TOITS.
						G1 Er klettert *auf* den BAUM (*acc.*).
						G2 Er suchte den Dieb *bis in* dem GEWÖLBE des Schlosses.
cl 07. b	M	*e-p r*	(*p*)	(*loc r*)	POINT OF REFERENCE	E He went *to* BED.
						F Se mettre *au* LIT.
						G Er ging *zu* BETT!
cl 07. c	M	(*e-p r*)	(*p*)	*loc r*	POINT OF REFERENCE	E The most judicious mode of putting a kicker *in* HARNESS.
						F La mouette descend *sur l'*EAU.
						G Er nahm IHM *gegenüber* Platz.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(C)			I, page 12, EFG Gnl Rmks, EF(5).
cl 07. a	E	An action impelling a movement *whose e-p is* (*a point*) *in* the WELL.	I & II, E(4), G(5.a-1); II, F007–8, G114, 131, 134; III, E021, 023.
			In English, combinations of e-p and locative relaters vary in form and meaning. *Into* is used in certain idiomatic expressions to point to an unexpected e-p (II & III, E024; Table II (B. 3)). The combination of *to* and *on* is found as *onto* (II, E026–7) and *on to* (II, E045).
	F	An ascent *whose e-p is* (*points*) *on* the ROOFS.	
	G1	A climb *whose e-p is* (*a point*) *on* the TREE.	
	G2	A searching *whose e-p is* (*a point*) *in* the VAULTS of the castle.	
cl 07. b	E	A movement *whose e-p is* (*a point*) (*in*) BED.	II, E155-6, G006; III, E155-6.
	F	Ditto.	
	G	Ditto.	
cl 07. c	E	An action compelling a movement (*whose e-p is*) (*a point*) *within* the HARNESS.	I, EF (5); I & II, E (5.a, b, c), F (5.a, c), G(5.a-3); II, E145, 158; G124; III, E036, 044, 068, 080–1a, 082, 158.
	F	A descent (*whose e-p is*) (*a point*) *on* the WATER.	
	G	A movement (*whose e-p is*) (*a point*) *opposite* HIM.	

TABLE II—*Continued*

	A	e-p r	B				S	
	First term of relation	End-ing-point relation	Second term of relation				Sample sentence	
			ENDING-POINT	r	POINT OF REFERENCE			
cl 08. a	(*M*)	*e-p r*	(*p*)	*loc r*	POINT OF REFERENCE	E	At dusk he harries the Abazai—at dawn he is *into* BONAIR.
						F	[Au crépuscule il dépouille les Abazai—à l'aube il est *dans* BONAIR.]
						G	[Morgen früh sind wir *in* BONAIR.]
cl 08. b	(*M*)	*e-p r*	(*p*)	(*loc r*)	POINT OF REFERENCE	E	*To* BED, you rascals!
						F	*Au* LIT!
						G	*Zu* BETT!
cl 09	M	(*e-p r*)	(*p*)	*loc r*	(. . .)	E	They were shown *in*.
						F	Il nous a pris *à part*.
						G	Er nahm ihn *beiseite*.
cl 10	(*M*)	(*e-p r*)	(*p*)	*loc r*	(. . .)	E	*Out! Out* with you!
						F	*Dehors! Dedans! En haut! En bas!*
						G	[Cf. cl 13.a, G.]

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 08. a	E	(*A movement*) *whose e-p is* (*a point*) *in* BONAIR.	II, E019; III, E019.
	F	[(*A movement*) (*whose e-p is*) (*a point*) *in* BONAIR.]	
	G	[Ditto.]	
cl 08. b	E	(*A commanded movement*) *whose e-p is* (*a point*) (*in*) BED.	II, E004; III, E004.
	F	Ditto.	
	G	Ditto.	
cl 09	E	A guiding (*whose e-p is*) (*a point*) *within* (*the place occupied by the others*).	I & II, E(5. b, c, d), F(5. c), G(5. d); II, G120–3, 125–8; III, Elliptic locative pronouns, page 69, E045, 047, 051, 080–1a, 090, 094.
	F	A moving (*whose e-p is*) (*a point*) *at one side of* (*the present location*).	
	G	Ditto.	
cl 10	E	(*A commanded movement*) (*whose e-p is*) (*a point*) *outside* (*this place*).	II, E082a, F025a. Cf. cl 13. a-b in which the direction of a movement is stressed. In cl 10 the e-p is stressed.
	F	(*A commanded movement*) (*whose e-p is*) (*a point*) *outside, in, above, below* (*this, that place*).	
	G	—	

TABLE II—*Continued*

	A	e-p r	B			S
			Second term of relation			
	First term of relation	Ending-point relation	ENDING-POINT	r	POINT OF REFERENCE	Sample sentence

(D) *Expressions or implications of e-p relation in combination with a from-ward directive relation.*

cl 11. a	M	*e-p r*	ENDING-POINT	*from-ward dir r*	(. . .)	E	I am going *out to* TUCSON.
						F	[Je m'*en* vais *à* PARIS.]
						G	[Ich gehe *zur* STADT *hinaus*.]
cl 11. b	M	(*e-p r*)	ENDING-POINT	*from-ward dir r*	(. . .)	E	I am going *down* TOWN, *up* TOWN.
						F1	[Je vais *en* VILLE.]
						F2	[Nous allons *dans le bas, dans le haut* de la VILLE.]
						F3	[Nous allons *à* la VILLE *basse, haute*.]
						F4	[Nous allons *remonter*.]
						G	Der Zug nähert sich *Nieder*BAYERN.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(D)			I, E(7), F Gnl Rmks, G Gnl Rmks, (7); II, EG(7); III, E080–1a, 097.
cl 11. a	E	A going *whose e-p is* TUCSON *outward from (my present location).*	III, E097.
	F	[A movement *outward from this place whose e-p is* PARIS.]	
	G	[A going, *whose e-p is* the CITY, *whose e-p is (a point) outward from (my present location).*]	Note repetition of e-p idea by *zu* and *hin.*
cl 11. b	E	A going (*whose e-p is*) (THE PART OF) TOWN *downward from (the residential district), upward from (the business district).*	III, E082, 097.
	F1	[A going (*whose e-p is*) (*a point*) *in* (THE BUSINESS PART OF) TOWN.]	
	F2	[A going (*whose e-p is*) (*a point*) *in* (THE PART OF) TOWN *downward from (the residential district), upward from (the business district).*]	
	F3	[A going (*whose e-p is*) (THE PART OF) TOWN *downward from (the upper part), upward from (the lower part).*]	
	F4	[*A going* (*whose e-p is*) (THE PLACE) *HABITUALLY* (OCCUPIED) *upward from (the business section of town).*]	
	G	A coming nearer (*whose e-p is*) (THE PART OF) BAVARIA *downward from (the upper part).*	

TABLE II—*Continued*

	A	e-p r	B			S	
			Second term of relation			Sample sentence	
	First term of relation	End-ing-point relation	ENDING-POINT	r	POINT OF REFERENCE		
cl 12. a	M	*e-p r*	(*p*)	*from-ward dir r*	(. . .)	E	[Cf. cl 12.b, E.]
						F	[Cf. cl 12.b, F.]
						G	Sie ging *hinunter* und grüsste ihn.
cl 12. b	M	(*e-p r*)	(*p*)	*from-ward dir r*	(. . .)	E1	He waited for her to come *down.*
						E2	To go *east.*
						F	[Il a attendu qu'elle *descende.*]
						G	[Cf. cl 12.a, G.]
cl 13. a	(*M*)	*e-p r*	(*p*)	*from-ward dir r*	(. . .)	E	[Cf. cl 13.b, E.]
						F	*A bas* les pattes!
						G	*Herunter* damit!
cl 13. b	(*M*)	(*e-p r*)	(*p*)	*from-ward dir r*	(. . .)	E	*Down* with your sails!
						F	[*Abaissez* les voiles!]
						G	[Cf. cl 13.a, G.]

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Additional Notes
cl 12. a	E	—	
	F	—	
	G	A going *whose e-p is (a point) downward from (her present location).*	
cl 12. b	E1	A coming (*whose e-p is*) (*a point*) *downward from* (*her present location*).	II, E157.
	E2	A going (*whose e-p is*) (*a point*) *eastward from* (*the starting-point*).	
	F	[*A movement* (*whose e-p is*) (*a point*) *downward from* (*her present location*).]	
	G	—	
cl 13. a	E	—	III, E101.
	F	(*A commanded movement*) *whose e-p is* (*a point*) *downward from* (*the present location*).	
	G	Ditto.	
cl 13. b	E	(*A commanded movement*) (*whose e-p is*) (*a point*) *downward from* (*the present location*).	II, E190–4; III, E101.
	F	[*A commanded movement whose e-p is* (*a point*) *downward from* (*the present location*).]	
	G	—	

TABLE II—*Continued*

	A	e-p r	B			S
			Second term of relation			
	First term of relation	Ending-point relation	ENDING-POINT	r	POINT OF REFERENCE	Sample sentence

(E) *Implications of e-p relation in expressions of position.*

cl 14	M	(*e-p r*)	*P* (*at p*)	*loc r*	POINT OF REFERENCE	E	He put them *upside down on* the TABLE.
						F	Il les a mis *sur* la TABLE *sens dessus dessous.*
						G	Setzt sich der Aff *rittlings aufs* HOLZ.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(E)			I & II, EFG(8); III, E080-1a.
		In the samples in Part II and Table II are found three chief ways of denoting position: (i) by a restrictive expression, e.g., *upright, alongside;* (ii) by a predicative and a restrictive expression, e.g., *sit up;* (iii) by a predicative expression, e.g., *stand, sit, lie.* References given below for Part II are grouped in accordance with the aforesaid ways of denoting position.	
cl 14	E	A moving (*whose e-p is*) *a vertically reversed position* (*at points*) *on* the TABLE.	II, (i) E114–5; (ii) G056, 079; (iii) E158, G019, 026, 028–9, 057, 059–60, 129–31, 134.
	F	Ditto.	Class 14 is one in which position is denoted irrespective of its location, with its location expressed. Expression of the location of an e-p position may be (a) by means of a locative relater plus point of reference, or (b) by means of some other kind of locative phrase. (a) is illustrated in the samples here given and referred to. An instance of (b) is 'He threw himself down *on his back where* the pine-needles were thickest' which expresses 'a movement (*whose e-p is*) *a horizontal P with remaining portion of body over back at a place on which* the pine-needles were thickest'. (Cf. G133.)
	G	A movement (*whose e-p is*) *a straddling position* (*at a point*) *on* the WOOD.	
			In sentences of the types of classes 14 and 15 position is denoted in any of the three ways noted at the head of this division.

TABLE II—*Continued*

	A	e-p r	B				S	
	First term of relation	End-ing-point relation	Second term of relation					Sample sentence
			ENDING-POINT	r	POINT OF REFERENCE			
cl 15	M	(*e-p r*)	*P* (*at p*)	(*loc r*)	(. . .)		E	Sit *up* and pay attention.
							F	Elle a mis son bonnet *sens devant derrière.*
							G	Er stellte das Kind *auf die Füsse.*
cl 16	M	(*e-p r*)	*P* (*at p*)	*loc r*	POINT OF REFERENCE		E	Our ship came *alongside* the English STEAMER.
							F	[Notre navire *a accosté* le VAPEUR anglais.]
							G	Unser Boot legte sich *langseit* dem Englischen DAMPFER.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 15	E	A commanded movement (*whose e-p is*) *an upright position* (*at a point*) (*on*) (*your chair*).	II, (i) E036, 081, 109–10, 182, F067–8, G075; (ii) E111–3, G132; III, E036, 109–10, 111.
	F	A moving (*whose e-p is*) *a hind-side-foremost position* (*at points*) (*on*) (*the head*).	Class 15 is one in which position is denoted irrespective of its location, with its location unexpressed.
	G	A moving (*whose e-p is*) *a vertical position with remaining portion of body above feet* (*at a point*) (*on*) (*the ground*).	
cl 16	E	A coming (*whose e-p is*) *a lengthwise position* (*at points*) *by the side of* the STEAMER.	II, (i) E032–3, 048, G054, 078; (ii) E044, G055–6, 077.
	F	[*A movement whose e-p is a lengthwise position* (*at points*) *by the side of* the STEAMER.]	Class 16 is one in which position is denoted by reference to its location, with its location expressed by means of the same locution which portrays said position, e.g., 'My mother put her arms *around* my neck.' Here *around* denotes the position of the encircling arms by reference to their location '*around* MY NECK'. The sentence expresses 'a motion (*whose e-p is*) *a position around* NECK (*at points*) *around* NECK'.
	G	Same as E.	In sentences of the types of classes 16 and 17 position is denoted by a restrictive expression or by both a restrictive and a predicative expression, but not by merely a predicative expression.

TABLE II—*Continued*

	A	e-p r	B				S
	First term of relation	End-ing-point rela-tion	Second term of relation				Sample sentence
			ENDING-POINT	r	POINT OF REFERENCE		
cl 17	M	(*e-p r*)	*P* (*at p*)	*loc r*	(. . .)	E	The naked hulk *alongside* came.
						F	[Cf. cl 16, F.]
						G	Ein Boot kam *längseits.*

(F) *Expressions or implications of e-p relation in interrogative and indicative pronouns of space-location.*

cl 18. a	M	*e-p r*	*qst'd* / *ind'd*	*pl* / *obj* / *pers*	E1	*Thither* he went.
					E2	*Whereto* do you hasten?
					F	*Jusqu'où* allez-vous?
					G1	Sie kam *hierher, hierhin, her, herzu; dahin, dorthin, hin, hinzu.*
					G2	Auf der *Hin*fahrt trafen wir keine, auf der *Her*fahrt recht angenahme Gesellschaft.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 17	E	A movement (*whose e-p is*) *a position lengthwise of* (. . .) (*at points*) *by the side of* (. . .).	II, (i) E047; III, E047. Class 17 is one in which position is denoted by reference to its implied location, with its location implied by means of the same locution which portrays said position. 'The naked hulk *alongside* came' expresses 'a movement (*whose e-p is*) *a position lengthwise of* (IMPLIED LOCATION) (*at points*) *alongside* (IMPLIED LOCATION)'.
	F	—	
	G	Same as E.	
(F)			I, E(10), G, Gnl. Rmks.; I & II, E(10. a, b), F(10.b), G(5.a-2, 9, 10.a); III, Interrogative pronouns, page 64, Indicative pronouns, pages 65ff, 69.
cl 18. a	E1	A going *whose e-p is that place, object, person.*	II, E015, 117–9, F010, G080–2, 084–5, 088–91, 094, 096–100, 102–3, 138; III, E015.
	E2	A questioned going *whose e-p is what place.*	
	F	A questioned going *whose e-p is what place.*	*jusqu'où?; jusqu'ici: jusque là* = 'to' + 'what[this,that]-place[obj, pers]'
	G1	A coming *whose e-p is this, that place, object, person.*	*whereto? wohin?; hereto, hierher, hierhin; thereto, dahin, dorthin* = 'what[this, that]-place [obj, pers]-' + '-to'
	G2	A journey *whose e-p is that, this place.*	*whither?; hither, her; thither, hin* = 'to-what[this, that]-place[obj, pers]'
			herzu; hinzu = 'to-this[that]-place [obj, pers]-' + '-to'

TABLE II—*Continued*

	A	e-p r	B				S
	First term of relation	End-ing-point rela-tion	Second term of relation				Sample sentence
			ENDING-POINT	r	POINT OF REFERENCE		
cl 18. b	M	(*e-p r*)	*qst'd* *ind'd*			*pl* *obj*	E Are you going *some-where*? F1 *Partout* il me poursuit. F2 Rendez-vous-*y*. G *Hier* stieg er aus.
cl 19. a	(*M*)	*e-p r*	*qst'd* *ind'd*			*pl* *obj* *pers*	E *Whither* away? F *Jusqu'ici* et pas plus loin. G Er will *hierher, hier-hin, her, herzu; da-hin, dorthin, hin, hinzu.*
cl 19. b	(*M*)	(*e-p r*)	*qst'd* *ind'd*			*pl* *obj*	E *There*, you fool! F Valère, *ici*! G *Hier?* frage ich.
cl 20. a	M	*e-p r*	(*p*)	*loc r*	*qst'd* *ind'd*	*pl* *obj*	E The black blood flowed *thereinto.* F [Cf. cl 20. c, F.] G Stelle es *dorthinein, hinein.*

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 18. b	E	A questioned movement (*whose e-p is*) *some place.*	II, E122–8, 131–6, F069, 071–4, 075–7; III, E124, 134.
	F1	Movements (*whose e-p is*) *all places.*	
	F2	A going (*whose e-p is*) *that place.*	
	G	A getting off (*whose e-p is*) *this place.*	
cl 19. a	E	(*A going*) *whose e-p is what place, object, person?*	II, F009.
	F	(*A permitted going*) *whose e-p is this place.*	
	G	An intended (*going*) *whose e-p is this, that place, object, person.*	
cl 19. b	E	(*A commanded movement*) (*whose e-p is*) *that place.*	II, F070.
	F	(*A commanded movement*) (*whose e-p is*) *this place.*	
	G	(*A questioned moving*) (*whose e-p is*) *this place.*	
cl 20. a	E	A flowing *whose e-p is* (*points*) *in that object.*	II, E025, G087, 101.
	F	—	*thereinto* = 'that place-' + '-in-' + '-to'
	G	A commanded movement *whose e-p is* (*a point*) *in that place.*	*dorthinein* = 'that place-' + '-to-' + '-in'
			hinein = 'to-that-place-' + '-in' (See I. G(10.a), last paragraph.)

TABLE II—*Continued*

	A	e-p r	B				S	
	First term of relation	End-ing-point rela-tion	Second term of relation: ENDING-POINT	r	POINT OF REFERENCE			Sample sentence
cl 20. b	M	*e-p r*	(*p*)	(*loc r*)	*qst'd* / *ind'd*	*pl* / *obj*	E	I have *hereunto* set my hand and seal.
							F	[Cf. cl 20. c, F.]
							G	[Cf. cl 20. a, G.]
cl 20. c	M	(*e-p r*)	(*p*)	*loc r*	*qst'd* / *ind'd*	*pl* / *obj*	E	Gazing in exaltation at the throne, he strode forward and sat *thereon.*
							F1	Mettez le *là-dessus.*
							F2	L'eau limpide s'*y* déverse.
							F3	J'*y* ai apposé ma signature.
							G	Er giesst Wein *daran.*
cl 21. a	(*M*)	*e-p r*	(*p*)	*loc r*	*qst'd* / *ind'd*	*pl* / *obj*	E	[Cf. cl 21. b, E.]
							F	[Cf. cl 21. b, F.]
							G	*Herein!*
cl 21. b	(*M*)	(*e-p r*)	(*p*)	*loc r*	*qst'd* / *ind'd*	*pl* / *obj*	E	*In here?*
							F	*Là-dedans*, s'il vous plaît.
							G	*Dahinter*, bitte!

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 20. b	E	A moving *whose e-p is (a point) (on) this object.*	II, E119a.
	F	—	
	G	—	
cl 20. c	E	A movement (*whose e-p is*) a sitting position (at) (*a point*) *on it.*	II, E072, F026, 028, 031, G033–5, 037,038–9, 041, 043–4, 046, 048.
	F1	A commanded movement (*whose e-p is*) (*a point*) *on it.*	
	F2	A movement (*whose e-p is*) (*points*) *in that object, it.*	II, F074a, b.
	F3	A moving (*whose e-p is*) (*a point*) *on it.*	
	G	A moving (*whose e-p is*) (*a point*) *on it.*	
cl 21. a	E	—	II, G086.
	F	—	
	G	(*A requested movement*) *whose e-p is (a point) in this place.*	
cl 21. b	E	(*A questioned movement*) (*whose e-p is*) (*a point*) *in this place.*	II, F031a, G037a, 045.
	F	(*A commanded movement*) (*whose e-p is*) (*a point*) *in that object.*	
	G	(*A commanded movement*) (*whose e-p is*) (*a point*) *behind that object.*	

TABLE II—*Continued*

	A First term of relation	e-p r Ending-point relation	B ENDING-POINT OF MOTION EXPRESSED BY SUBORDINATE VERB~	S Sample sentence

(G) *Expressions or implications of e-p relation in relative pronouns of space-location.*

cl 22. a	~	*e-p r*	*which*	E	The feast *where[un]to* we hasten.
				F	Le banquet *auquel* nous nous rendons en toute hâte.
				G	Das Fest *zu dem, zu welchem, nach dem, nach welchem,* wir eilen.
cl 22. b	~	(*e-p r*)	*which*	E	She followed on to the place *where* he had gone.
				F	Elle le suivit jusqu'à l'endroit *où* il était allé.
				G	[Cf. cl. 25.a, G1, G2.]
cl 23	~	(*e-p r*)	(*p*) *on which* (*p*) *in which* (*p*) *near which* etc.	E	The tome is still on the table *where[up]on* I had laid it.
				F	[Le livre est encore sur la table, *sur laquelle* je l'avais posé.]
				G	Das Buch ist noch auf dem Tische, *worauf* ich es gelegt hatte.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
(G)			I & II, E(10.a, b), F(10.b), G(5. a-2, 10.a); III, Relative pronouns, page 67.
cl 22. a	E	A hastening *whose e-p is the referred-to occasion.*	II, E119b. *where[un]to* = 'which-' + '-to'
	F	Ditto.	*auquel* = 'to-' + '-which' *zu dem*, etc. = 'to' + 'which'
	G	Ditto.	
cl 22.b	E	A going (*whose e-p is*) *the referred-to place.*	II, E129
	F	Ditto.	
	G	—	
cl 23	E	A laying (*whose e-p is*) (*a point*) *on the referred-to object.*	II, G036, 040, 042, 047, 049.
	F	[Ditto.]	*where[up]on* = 'which-' + '-(to a point) on'
	G	Ditto.	*sur lequel, laquelle, lesquelles,* = '(to a point)on' + 'the-which' *worauf* = 'which-' + '-(to a point)on'

TABLE II—*Continued*

	A First term of relation	e-p r Ending-point relation	B ENDING-POINT (symbolized by 'place') OF MOTION EXPRESSED BY PRINCIPAL VERB M, AND DIRECT OBJECT OR ENDING-POINT OR LOCATION (symbolized by 'which') OF OCCURRENCE EXPRESSED BY SUBORDINATE VERB (symbolized by ~)	S Sample sentence	
cl 24	M	*e-p r*	*place which* ~	E	Wandering they knew not *whither*.
				F	[Il est parvenu *à un endroit qu'*il ne connaissait pas.]
				G	Sie wanderten *wohin* sie wollten.
cl 25. a	M	*e-p r*	*place to which* ~	E	Go *whither* he went.
				F	[Cf. cl 24, F.]
				G1	Wir gehen *wohin* er gegangen ist.
				G2	Wir gehen *dahin wo* er gegangen ist.
cl 25. b	M	(*e-p r*)	*place (to) which* ~	E	We shall go *where* he went.
				F	Je vais *où* le vent me mène.
				G	Wir reisen ihm nach *wo* er gegangen ist. [Colloquial. Cf. cl 25. a, G.]
cl 26	M	(*e-p r*)	*place at which* ~	E	Let's go *where* it's quiet.
				F	Nous irons *où* chantent les hirondelles.
				G	Wir gehen *wo* es still ist.

TABLE II—*Continued*

		English rendering of instance of A, e-p r, B	References Annotations
cl 24	E	A wandering *whose e-p is places which* they know not.	II, E120–1, G105; III, E120.
	F	[A movement *whose e-p is a place which* he did not know.]	*whither* = 'to-a-place-which'
	G	A wandering *whose e-p is places which* they desired.	*à un endroit que* = 'to' + 'a place' + 'which'
			wohin = 'a-place-which-' + '-to'
cl 25. a	E	A commanded movement *whose e-p is the place to which* he went.	II, E119c, G105a.
	F	—	*whither* = 'to-a-place-to-which'
	G1	Ditto.	*wohin* = 'a-place-(to-)which- + '-to'
			dahin wo = the-place-' + '-to' + '(to-)which'
	G2	Ditto.	
cl 25. b	E	A movement (*whose e-p is*) *the place* (*to*) *which* he went.	II, F079.
	F	A going (*whose e-p is*) *any place* (*to*) *which* the wind has or will have taken me.	*where* = ('to-)the-place-(to-) which'
	G	Same as E.	*où* = Ditto.
			wo = Ditto.
cl 26	E	A requested movement (*whose e-p is*) *any place at which* it is quiet.	II, E130.
	F	A going (*whose e-p is*) *the place at which* nightingales sing.	*where* = '(to-)a-place-at-which'
	G	A going (*whose e-p is*) *any place at which* it is quiet.	*où* = Ditto.
			wo = Ditto.

TABLE II—*Concluded*

A OCCURRENCE	r loc r	B PLACE WHERE	S Sample sentence
cl 27 OCCURRENCE	*loc r*	*any place (to) which*	E *Wherever* I go, I find the same sadness.
			F *Quelque part que* l'on ait pénétré, l'homme a trouvé partout des hommes.
			G [*Wohin* ich *auch* immer gehe, finde ich Kummer.]

(H) *Implications of e-p relation in stray words.*

	A	e-p r	B		
	First term of relation	Ending-point relation	ENDING-POINT	r	POINT OF REFERENCE
cl 28	M	(*e-p r*)	*ENDING-POINT*		

E He went *HOME*.
F [Il est allé *CHEZ LUI*.]
G Der Hirt treibt die Herde *HEIM*.

TABLE II—*Concluded*

		English rendering of instance of A, loc r, B, or of A, e-p r, B	References Annotations
cl 27	E	The finding of sadness *in any place* (*to*) *which* I go.	II, E137, F078; III, 137.
			Wherever = 'in-place-(to-) which-' + '-any'
	F	The finding of men *in any place* (*to*) *which* one has penetrated.	*Quelque part que* = '(in) any' + 'place' + '(to-) which'
	G	[The finding of trouble *in any place to which* I go.]	[*Wohin auch* = 'in-place-which-' + '-to' + 'any']
(H)			I & II, EG(11).
cl 28	E	A going (*whose e-p is*) HOME.	[Cf. II, F011.] III, E138-9.
	F	[A going (*whose e-p is*) (A POINT) AT ONE'S OWN PLACE.]	
	G	A compelling of a movement (*whose e-p is*) HOME.	

Editorial Note

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The following errors in the originally published version have been corrected directly into the text printed here (page references are to the original):
p. 21, l. 34–35: Le forêt étend (correct: La forêt s'étend)
p. 80, l. 37: *de le ville* (correct: *de la ville*)
p. 98, under cl 03, F1: permi (correct: permis)
p. 120, under cl 22.b, F: le suivi (correct: le suivit)

Further corrections to be made (page references are to the original):
p. 22, l. 19: *au côté*; correct into: *à côté* [2 x]
p. 22, l. 20: *deça*; correct into: *deçà*
p. 23, l. 13: *une autre vase*; correct into: *un autre vase*
p. 49, l. 29: 'deça'; correct into: 'deçà'
p. 50, l. 14–15: one of the doors; correct into: one of the gates
p. 51, l. 14–15: ba-ton; correct into: bâ-ton
p. 64, l. 7: space locative; correct into: space-locative
p. 70, l. 11–12: but to to use; correct into: but to use
p. 80, l. 34: Monmartre; correct into: Montmartre
p. 118 under class 20c, F1: Mettez le; correct into: Mettez-le

The spelling of words as quoted from lexicographical sources has not been modernized.

GRADING, A STUDY IN SEMANTICS

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1. THE PSYCHOLOGY OF GRADING

The first thing to realize about grading as a psychological process is that it precedes measurement and counting. Judgments of the type "A is larger than B" or "This can contains less milk than that" are made long before it is possible to say, e.g., "A is twice as large as B" or "A has a volume of 25 cubic feet, B a volume of 20 cubic feet, therefore A is larger than B by 5 cubic feet," or "This can contains a quart of milk, that one 3 quarts of milk, therefore the former has less milk in it." In other words, judgments of quantity in terms of units of measure or in terms of number always presuppose, explicitly or implicitly, preliminary judgments of grading. The term *four* means something only when it is known to refer to a number which is "less than" certain others, say *five*, *six*, *seven*, arranged in an ordered series of relative *mores* and *lesses*, and "more than" certain others, say *one*, *two*, *three*, arranged in an ordered series of relative *mores* and *lesses*. Similarly, *a foot* as a unit of linear measure has no meaning whatever unless it is known to be more than some other stretch, say *an inch*, and less than a third stretch, say *a yard*.

Judgments of "more than" and "less than" may be said to be based on perceptions of "envelopment." If A can be "enveloped by" B, contained by it, so placed in contact with B, either actually or by the imagination, as to seem to be held within its compass instead of extending beyond it, it is judged to be "less than" B, while B is judged to be "more than" A. With only two existents of the same class, A and B, the judgments "A is *less than* B" and "B is *more than* A" can be translated into the form "A is *small*" and "B is *large*." In the case of the two cans of milk, we may say "There is *little* milk in this can" and "There is *much* milk in that can." Again, if there are three men in one room and seven in another, we may either say "The first room has *fewer* men in it *than* the second" and "The second room has *more* men in it *than* the first" or, if we prefer, "The first room has *few* men in it" and "The second room has *many* men in it."[1] Such contrasts as *small* and *large*, *little* and *much*, *few* and *many*, give us a deceptive feeling of absolute values within the field of quantity comparable to such qualitative differences as *red* and *green* within the field of color perception. This feeling is an illusion, however, which is largely due to the linguistic fact that the grading which is implicit in these terms is not formally indicated, whereas it is made explicit in such judgments as "There were *fewer* people there *than* here" or "He has *more* milk *than* I." In other words, *many*, to take but one example, embodies no class of judgments clustering about a given quantity norm which is applicable to every type of experience, in the sense in which *red* or *green* is applicable to every experience in which color can have a place, but is, properly speaking, a purely relative term which loses all significance when deprived of its conno-

[1] "Few" and "many" in a relative sense, of course. More of this anon.

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tation of "more than" and "less than." *Many* merely means any number, definite or indefinite, which is *more than* some other number taken as point of departure. This point of departure obviously varies enormously according to context. For one observing the stars on a clear night thirty may be but "few," for a proof-reader correcting mistakes on a page of galley the same number may be not only "many" but "very many." Five pounds of meat may be embarrassingly "much" for a family of two but less than "little" from the standpoint of one ordering provisions for a regiment.

2. DEGREES OF EXPLICITNESS IN GRADING

We may bring these remarks to a focus by saying that all quantifiables (terms that may be quantified) and all quantificates (terms to which notions of quantity have been applied) involve the concept of grading in four degrees of explicitness.

(1) Every quantifiable, whether existent (say *house*) or occurrent (say *run*) or quality of existent (say *red*) or quality of occurrent (say *gracefully*), is intrinsically gradable. No two houses are exactly identical in size nor are they identical in any other feature that can be predicated of them. Any two houses selected at random offer the contrast of "more" and "less" on hundreds of features which are constitutive of the concept "house." Thus, house A is higher but house B is roomier, while existent C is so much smaller than either A or B that it is "less of a house" than they and may be put in the class "toy" or at best "shack." Similarly, the concept of "running," involving, as it does, experience of many distinct acts of running which differ on numerous points of "more" and "less," such as speed, excitement of runner, length of time, and degree of resemblance to walking, is as gradable as that of "house." Different examples of "red" similarly exhibit "mores" and "lesses" with respect to intensity, size of surface or volume characterized as red, and degree of conformity to some accepted standard of redness. And "gracefully" is quite unthinkable except as implying a whole gamut of activities which may be arranged in a graded series on the score of gracefulness. Every quantifiable, then, not yet explicitly quantified, is gradable. Such terms may be called *implicitly gradable but ungraded.*

(2) As soon as a quantifiable has been quantified, the resulting quantificate necessarily takes its place in an infinite set of graded quantificates. Thus, *three houses* and *the whole house* belong to infinite sets in which they are respectively "less than" *four houses, five houses, six houses,* $\cdots$, and "more than" *half of the house, a third of the house, a fourth of the house,* $\cdots$. Such terms may be called *implicitly graded by quantification.* The process of grading is here of interest only insofar as quantification is impossible without it.

(3) Instead of directly quantifying a quantifiable in terms of count or measure, e.g. *one hundred men* or *a gill of milk*, one may content oneself with an indirect quantification by means of quantifiers which are thought of as occupying positions in a sliding scale of values of "more" and "less," e.g. *many men* or *a little milk*. Such terms may be called *quantified by implicit grading.* Here the grading is of essential interest but is assumed as accomplished rather than stated as

taking place. Such terms as *many* are psychologically midway between terms like *more than* and *hundred*. First, a set A is perceived as capable of envelopment by another set B, which latter is then declared to be "more than" A. Next, B is declared to be "many," the reference to sets of type A_1, A_2, A_3, $\cdots$, all of which are "less than" B, being purely implicit. Finally, the "many" of B is discovered to consist of a definite number of terms, say "one hundred," at which point grading as such has ceased to be of interest. In the realm of quantity "one hundred" is a gradable but ungraded absolute in approximately the same sense in which in the realm of existents "house" is a gradable but ungraded absolute.

(4) Instead, finally, of quantifying by means of terms which grade only by implication we may grade explicitly and say, e.g., "*More men* are in this room *than* in that." Such a statement emphasizes the fact of grading itself, the quantifying judgment (e.g. "*Many men* are in this room but *few* in that" or "*Few men* are in this room but *even fewer* in that") being left implicit. Such terms as "more men" may be called *explicitly graded and implicitly quantified*.

The following scheme conveniently summarizes the grading gamut:

1. Implicitly gradable but ungraded: *house; houses*
2. Implicitly graded by quantification: *half of the house; a house 20 ft. wide; ten houses*
3. Quantified by implicit grading: *much of the house; a large house; many houses*
4. Explicitly graded and implicitly quantified: *more of the house (than); a larger house; more houses (than)*

3. GRADING FROM DIFFERENT POINTS OF VIEW

Only the last two types of terms are of further interest to us here. We shall briefly refer to the quantifying elements of terms of class 3 as *implicitly graded quantifiers*, to explicitly grading terms as *graders* (*more* than, *less* than), and to the implicitly quantifying elements of terms of class 4 as *explicitly grading quantifiers*. It is very important to realize that psychologically all comparatives are primary in relation to their corresponding absolutes ("positives"). Just as *more men* precedes both *some men* and *many men*, so *better* precedes both *good* and *very good*, *nearer* (= *at a less distance from*) precedes both *at some distance from* and *near* (= *at a small distance from*). Linguistic usage tends to start from the graded concept, e.g. *good* (= *better than indifferent*), *bad* (= *worse than indifferent*), *large* (= *larger than of average size*), *small* (= *smaller than of average size*), *much* (= *more than a fair amount*), *few* (= *less than a fair number*), for the obvious reason that in experience it is the strikingly high-graded or low-graded concept that has significance, while the generalized concept which includes all the members of a graded series is arrived at by a gradual process of striking the balance between these graded terms. The purely logical, the psychological, and the linguistic orders of primacy, therefore, do not necessarily correspond. Thus, the set *near*, *nearer*, *far*, *farther*, and *at a normal distance from* and the set *good*, *better*, *bad*, *worse*, *of average quality*, show the following orders of complication from these three points of view:

A. LOGICAL GRADING:

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Type I. *Graded with reference to norm:*

(1) *Norm: at a normal distance from; of average quality*

(2) *Lower-graded: at a less than normal distance from* = *nearer* or *less far* (*from*) (explicitly graded), *near* or *not far* (*from*) (implicitly graded); *of less than average quality* = *worse* or *less good* (explicitly graded), *bad* or *not good* (implicitly graded)

(3) *Upper-graded: at a more than normal distance from* = *farther* or *less near* (explicitly graded), *far* or *not near* (implicitly graded); *of more than average quality* = *better* or *less bad* (explicitly graded), *good* or *not bad* (implicitly graded)

Type II. *Graded with reference to terms of comparison:*

(1) *Lower-graded: at a less distance than* = *relatively nearer* or *relatively less far* (explicitly graded), *relatively near* or *relatively not far* (implicitly graded); *of less quality than* = *relatively worse* or *relatively less good* (explicitly graded), *relatively bad* or *relatively not good* (implicitly graded)

(2) *Upper-graded: at a greater distance than* = *relatively farther* or *relatively less near* (explicitly graded), *relatively far* or *relatively not near* (implicitly graded); *of greater quality than* = *relatively better* or *relatively less bad* (explicitly graded), *relatively good* or *relatively not bad* (implicitly graded).

Note on A (Logical Grading). In type I, "graded with reference to norm," any "nearer" or "near" is nearer than any "farther" or "far," any "worse" or "bad" is worse than any "better" or "good"; correlatively, any "farther" or "far" is farther than any "nearer" or "near," any "better" or "good" is better than any "worse" or "bad." But in type II "graded with reference to terms of comparison," "nearer" and "near" do not need to be near but may actually, i.e. according to some norm, be far, "worse" and "bad" do not need to be bad but may actually be good; correlatively, "farther" and "far" do not need to be far but may actually be near, "better" and "good" do not need to be good but may actually be bad. Hence specific "nears" and "bads" may factually be respectively farther and better than specific "fars" and "goods."

A warning: These are logical terms, not terms of actual usage, which exhibit great confusion. In certain cases usage preferentially follows type I, e.g. "more brilliant" and "brilliant" connote, as a rule, some degree of noteworthy ability, "more brilliant" being rarely equivalent merely to "not so stupid"; "good" follows type I, but "better" follows type II, being equivalent to "relatively better, not so bad," e.g. "My pen is *better than* yours, but I confess that both are bad" (on the other hand, "A is *more brilliant than* B, but both are stupid" is meaningless except as irony, which always implies a psychological transfer); "near" tends to follow type I, "nearer" follows type II, but "near" may frequently be used like a type II term, e.g. "From the point of view of America, France is on the *near* side of Europe," i.e. "*nearer than* most of Europe, though actually far." Interestingly enough, the correlatives of these terms do not exactly correspond. "Stupid" and "less stupid" follow type I, "less stupid" being never equivalent to "more brilliant" (except, again, ironically); "less brilliant" is still "brilliant" as a rule, just as "less stupid" is still "stupid." "Bad" and "less bad," differing in this respect from "good" and "better," both follow type I; "less bad" is still "bad" but "better" (with reference to another

term) may be even worse. (The "more" of inverse terms, e.g. "more stupid" and "worse," has a negative direction, as we shall see later.) "Far" tends to follow type I, "farther" follows type II, but "far" may frequently be used like a type II term, e.g. "He is sitting at the *far* end of the table," i.e. "at the end that is *farther*, though actually near." Needless to say, a logical analysis must proceed regardless of linguistic usage. On the whole, usage tends to assign comparative terms to type II of grading, positive terms to type I of grading, though this tendency never hardens into a definite rule. The linguistic types will be tabulated under C below.

According to strict logic, we should start from, say, *good = of average quality* (type I) or *of a certain quality* (type II) and grade all other qualities as follows:

Type I: *better, less good* (explicit), corresponding to ordinary *better, worse; good indeed, indeed not good* (implicit), corresponding to ordinary *good, bad.*

Type II: *relatively better, relatively less good* (explicit); *relatively good indeed, relatively indeed not good* (implicit).

How embarrassing logically such linguistic couplets as *good:bad, far:near, much:little* really are comes out in asking a question. "How *good* is it?" "How *far* was he?" and "How *much* have you?" really mean "Of what *quality* is it?" "At what *distance* was he?" and "What *quantity* have you?" and may be answered, with a superficial character of paradox, by "Very bad," "Quite near," and "Almost nothing" respectively.

B. Psychological Grading (*a* is graded with reference to *b*, which is either some other term comparable to *a* or stands for some norm):

Type I. *Open-gamut grading:* a, b, c, · · · , n.

(1) *Explicit: a is less than b = b is more than a: a is nearer than b = b is farther; than a, a is worse than b = b is better than a.* Similarly for a:c; · · · ; a:n; b:c. · · · ; b:n; · · · ; c:n; · · ·

(2) *Implicit: a is little = b is much: a is near = b is far, a is bad = b is good.* Similarly for other cases.

Type II. *Conjunct closed-gamut grading:* a, b, c, · · · , n [ ] o, p, q, · · · , t (e.g series of colors graded from *a*, vivid green, to *t*, vivid yellow).

(1) *Explicit: a is less green than b = b is greener than a;* · · · [judgments of more or less green or yellow] *o is less yellow than p = p is yellower than o;* · · · In the brackets [ ] we have indeterminate field of marginal greens and marginal yellows, in which a_1:a_1 *is greener than* b_1 = b_1 *is yellower than* a_1 = a_1 *is less yellow than* b_1. In other words, at some point, *n*, crest of green is reached and *more green* as grader gives way to *more yellow*, with establishment in transition zone, [ ], of secondary *more green* always coming before *less green.*

(2) *Implicit: a, b, c, · · · , n are shades of green;* [judgments of green or yellow]; *o, p, q, · · · , t are shades of yellow.* In the brackets [ ] we have *yellowish greens* and *greenish yellows.*

Type III. *Open-gamut grading (I) interpreted in terms of conjunct closed-gamut grading (II):* "a, b, c, · · · , n" interpreted, by analogy of (II), as "a, b, c, · · · , g [ ] h, i, j, · · · , n [ ]."

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(1) *Explicit: a is less than b = b is more than a: a is less far than b = b is farther than a, a is less good than b = b is better than a;* · · · [ ] *h is less near than i = i is nearer than h, h is less bad than i = i is worse than h;* · · ·. In transition zone [ ] we have psychologically indeterminate field of marginal fars (goods) and marginal nears (bads), in which a_1:b_1 is interpreted as b_1 *is less far (good) than* $a_1 = a_1$ *is farther (better) than* $b_1 = b_1$ *is nearer (worse) than* $a_1 = a_1$ *is less near (bad) than* b_1. In other words, at some point, g, crest of far (good) is reached and *farther (better)* as grader gives way to *nearer (worse)*, with establishment in transition zone, [ ], of secondary *farther (better)* always coming before *less far (less good)*. Type III, however, differs from type II in that it has a second psychologically indeterminate field of marginal nears (bads) and marginal fars (goods), in which h_1:i_1 is interpreted as i_1 *is less near (bad) than* $h_1 = h_1$ *is nearer (worse than* $i_1 = i_1$ *is farther (better) than* $h_1 = h_1$ *is less far (good) than* i_1. In other words, at some point, n, crest of near (bad) is reached and *nearer (worse)* as grader gives way to *farther (better)*, with establishment in second transition zone, [ ], of secondary *nearer (worse)* always coming before *less near (less bad)*. Obviously, our second [ ] brings us back to a, b, c, · · ·, g. Type III of psychological grading (*far-near, good-bad*) is circular in configuration, as we shall see more clearly later on, while type II (*violet-blue-green-yellow-orange-red*) is successively semicircular. Type II may be called *conjunct semicircular closed-gamut grading* or *conjunct closed-gamut grading with open ends;* type III, *conjunct circular closed-gamut grading* or *conjunct closed-gamut grading with meeting ends.*

(2) *Implicit: a, b, c,* · · ·, *g are far (good) in varying degree; h, i, j,* · · ·, *n are near (bad) in varying degree.* In first transition zone [ ] we have psychological blends of type *not near (bad), not really near (bad)*, in second transition zone [ ], psychological blends of type *not far (good), not really far (good)*.

Type IV. *Disjunct closed-gamut grading:* a, b, c, · · ·, g [e.g. neither blue nor yellow] o, p, q, · · ·, t.

(1) *Explicit: a is less blue than b = b is bluer than a;* · · · [zone of indifference in which neither *blue* nor *yellow* strictly applies] *o is less yellow than p = p is yellower than o;* · · ·. There is no psychological interest in zone of indifference, [ ], which is only gradually spanned with increasing experience and demand for continuity. When zone of indifference [ ] is recognized as h, i, j, · · ·, n, it may: (a), take on distinctive character, e.g. *green*, in which case type IV becomes identical with II, for with establishment of continuity certain blues now become *greenish blues, bluish greens* are created, and certain yellows now become *greenish yellows;* or (b), be characterized negatively, in which case we cannot do better than say *h is neither blue nor yellow, neither h nor i is blue or yellow, but h is more nearly blue than i and i is more nearly yellow than h, j is more nearly blue than yellow (is bluer than it is yellow), k is more nearly yellow than blue (is yellower than it is blue)*. In other words, for grading are substituted other techniques, which have grading implications, e.g. intermediate placement (*between blue and yellow*), goal-gauging (*nearly blue*), graded goal-gauging (*more nearly blue, nearer yellow than*), negation of alternatives (*neither blue nor yellow*), compromise (*blue-yellow*[2]).

[2] To be understood as theoretical tag for *green*.

(2) *Implicit: a, b, c, · · ·, g are shades of blue; o, p, q, · · ·, t are shades of yellow.* For zone of indifference [ ] see (1).

Type V. *Open-gamut grading* (I) *interpreted in terms of disjunct closed-gamut grading* (IV): "a, b, c, · · ·, n" interpreted, by analogy of (IV), as "a, b, c, · · ·, e [ ] j, k, l, · · ·, n."

(1) *Explicit: a is less hot, old, brilliant, good than b = b is hotter, (even) older, more brilliant, (even) better than a; · · ·* [zone of indifference in which neither *hot* nor *cold*, neither *old* nor *young*, neither *brilliant* nor *stupid*, neither *good* nor *bad* strictly applies] *j is less cold, young, stupid, bad than b = b is colder, younger, more stupid, worse than a; · · ·.* When zone of indifference [ ] is gradually recognized as f, g, · · ·, i, it may: (a), take on distinctive character, e.g. *temperate, middle-aged, of normal intelligence, of average quality*, such terms establishing filling-in norms rather than mores and lesses of primary fields (e.g. *more than middle-aged* rather than *more middle-aged, of more than normal intelligence* rather than *more normal*, which would generally be understood as an ellipsis for *more nearly normal*), in which case type V becomes identical with type I, f, g, · · ·, i being intercalated between j, k, l, · · ·, n and reversed field e, d, c, · · ·, a; or (b), be characterized negatively, e.g. *f if neither hot nor cold, neither f nor g is old or young but f is more nearly old than g, h is more nearly stupid than brilliant.* In other words, for grading are substituted other techniques, which have grading implication, e.g. intermediate placement (*betwixt old and young*), goal-gauging (*nearly good*), graded goal-gauging (*nearer cold than hot* = implicitly graded *cool*), negation of alternatives (*neither good nor bad*), compromise (*good or bad, depending on one's standard*).

(2) *Implicit: a, b, c, · · ·, e are hot, old, brilliant, good in varying degree; j, k, l, · · ·, n are cold, young, stupid, bad in varying degree.* For zone of indifference [ ] see (1).

Note on B (Psychological Grading). It must be carefully borne in mind that these five psychological types of grading, which naturally do not preclude the possibility of still other, and more complex, grading configurations, are by no means mutually exclusive types. The same objective elements of experience, e.g. *good*:*bad*, may be graded according to more than one type. Thus, when we say "A is *better than* B," though A and B are both bad, we are obviously treating *better* as an incremental grader in an open series in which the movement is assumed to be toward the relatively good and away from the relatively bad. "A is *better than* B" therefore illustrates type I, open-gamut grading, which is the prototype of all logical grading. On the other hand, when we say "A is *worse than* B, which in turn is *fairly good*," we do not mean to imply that A too is perhaps not too far from good, rather that A belongs distinctly to the lower end of the gamut, that *good* and *bad* are psychologically distinct qualities (not, like logically graded terms of type I, merely a more and a less of a single quality), but that these distinct qualities are psychologically contiguous and capable of being fitted into a single series with two crests or maxima. All of this means that in this case we are fitting the concepts of *good* and *bad* into a conjunct closed-gamut grading scheme, and since the natural, or rather logical, type to which *good*:*bad* belongs

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is type I, we speak of a transfer on the analogy of type II and create a blend type III. Finally, when we say "A is *better than* B but both are *good*, C is of quite a different order and is actually *bad*, while D, being *neither good nor bad*, is of no interest," we are thinking in terms of a type of grading in which psychologically distinct qualities are connected, by intercalation, into an open series of the disjunct closed-gamut grading type, namely type V.

Type I recognizes no crest, only a norm at best, which, in the logical form of the grading (A), sinks to an objective or statistical norm—in other words, an average. Type III recognizes two crests and two areas of blend, but no norm except at the points where psychology, via neutral judgments, fades away into logic. Type V recognizes two extreme and opposed crests and a trough of normality between them. Types I, II, and IV (*near*:*far*, *green*:*yellow*, *blue*:*yellow*) are given us directly through our sensations or perceptions. Type III is probably the most natural type for psychologically subjective, as contrasted with objective, judgments; even such simple contrasts as *near*:*far* and *good*:*bad* probably present themselves, first of all, as contiguous areas of contrasting quality, not as points above or below a norm with which they intergrade in an open series. After considerable experience with socially determined acceptances and rejections, familiarities and strangenesses, contrasting qualities are felt as of a relatively absolute nature, so to speak, and *good* and *bad*, for instance, even *far* and *near*, have as true a psychological specificity as *green* and *yellow*. Hence the logical norm between them is not felt as a true norm but rather as a blend area in which qualities grading in opposite directions meet. To the naive, every person is either good or bad; if he cannot be easily placed, he is rather part good and part bad than just humanly normal or neither good nor bad. Type V represents the most sophisticated type of judgment, for it combines psychological contrast with the objective continuum of more and less and recognizes the norm as a true area of primary grading, not as a secondary area produced by blending.

We can easily see now that the confused psychological state of our grading judgments and terminology, also the unsatisfactory nature of our logical grading terminology, is due to a number of factors, the chief of which are: 1, the tendency to conceive of certain points in an evenly graded series as primarily distinct and opposed to each other instead of directly capable of connection by grading in terms of more and less (this tendency is, of course, carried over even into the realm of abstract quantity, and even a mathematically trained person may find it somewhat paradoxical to call 7 "many" and 100 "few," though the 7 belong to a context in which 9, say, is the maximum, and 100 to another context in which 500 is the norm); 2, the contrary direction of grading in two such contrasted qualities, the "more" of one being logically, but not quite psychologically, equivalent to the "less" of the other (e.g. logically *better* = *less bad*, *worse* = *less good*, but psychologically this is not quite true; contrast *nearer* = *less far*, *farther* = *less near*, where logic and psychology more nearly correspond); 3, a preference for the upper or favored quality, in its relative sense, as grader (e.g. *better* and *heavier* more easily serve as incremental upward graders, *of more quality* and *of more*

weight, than do *worse* and *lighter* as incremental downward graders; this hangs together with 5); 4, the conflict with psychological grading brought in by a more sophisticated attempt to establish an absolute continuity of grading in a logical sense (problems of interpretation of how, of two contrasted terms, a and b, "more a" is related to "less b," and of whether the neutral area between a and b is to be understood as a "both and" area, a "neither nor" area, or logically as a tie between a and b, which thereupon lose their distinctiveness and one of which, in consequence, must change its direction of grading so that a complete open-gamut grading may be established); 5, the different psychological value of a given grade according to whether it is reached positively, e.g. *fairly good* from *poor*, or negatively, e.g. *fairly good* from *very good* (the latter "fairly good" is almost necessarily an "only fairly good," i.e. a "fairly good" with emotional coloring of "poor").

C. Linguistic Grading (elaboration of terms):

Type I. *Explicit:*

(1) *Abstract: more than, less than.* These terms are general upward and downward grading terms and carry no implication as to class of graded terms or as to presence or absence of norms or crests. Certain other terms, of originally specialized and normated application, such as *greater, larger*, and *smaller*, have taken on abstract significance (e.g. *a greater amount of* = *more* ··· *than, a larger number of* = *more* ··· *than, a smaller number of* = *less, fewer*). *More* and *less* apply to both count and measure. *Fewer*, as equivalent of *less*, applies to counted terms only, e.g. *fewer people* = *less people*, but is secondary as explicit grader, being based on *few*, which is implicitly graded. There is no special count term in English corresponding to *more*. *More* and *less* are old comparatives in form, but are not really referable to *much* and *little*.

(2) *Specialized.* There are no explicit specialized graders in English which are not based, generally by use of *more* and *less* or suffixing of comparative *-er*, on linguistically primary graded terms which imply above or below a logical norm. Thus, *heavier*, based on *heavy* (= *of more than average weight*), means *heavy to a greater extent* (*than another heavy object*) to begin with, and only secondarily takes on, in its specialized sphere of weight, the purely relative grading quality of *more;* similarly with *less heavy* as parallel to *less*. Such terms as *of more weight* or *more weighted, of less linear extent, of more temperature, less in volume* are not in ordinary use and have to be replaced by comparatives of such terms as *heavy, short, warm, small*, which are not neutral in reference as to graded area.

Type II. *Implicit:*

(1) *Abstract: much* and *little* for measured terms; *many* and *few* for counted terms. Note that implicitly graded terms can themselves be taken as new points of departure for grading, e.g. *less than many, more than a few, many* and *a few* being respectively arrived at by grading upward and downward from a certain norm. "How *much*?" and "How *many*?" show how helpless language tends to be

in devising neutral, implicitly graded abstract terms; linguistically upper-graded terms for logically neutral ones are also used in such terms as *so and so many, as much as.*

(2) *Specialized:* A great variety of terms, most of which appear as pairs of opposites. We may distinguish:

(a) *One-term sets* (graded as *more* and *less;* there is no true contrary): *capacious, silvery, distant* (in its strictly scientific sense of *at such and such a distance, near* and *far* being "psychologized" forms of it). Such terms are either of notions of a relatively ungradable type or are of scientific rather than popular application. Such terms as "how *far?*", "how *long?*", "2mm. *wide,*" "how *warm?*", "*as heavy as* one tenth of a gram," "*old enough* to know better" again show how helpless language tends to be in devising specialized single terms which are logically neutral as to grading.

(b) *Two-term sets.* Two types are both common: 1, *linguistically unrelated terms* indicating opposites, e.g. *good:bad, far:near, high:low, long:short, full:empty, heavy:light, friend:enemy, hard:soft, old:young;* 2, *linguistically related terms* which are implicitly affirmative and explicitly contrary (formally negative) terms, e.g. *friendly:unfriendly* (also type (b) 1, *friendly:hostile, inimical*), *usual:unusual, normal:abnormal, frequent:infrequent, discreet:indiscreet.* These formally negative terms frequently take on as distinctive a meaning as type (a) contraries and can be as freely graded, "upward" and "downward," e.g. *more* and *less infrequent* are as good usage as *rarer* and *less rare.*

Note on (*b*), *Two-term sets.* As regards grading relations, two-term sets (contrary terms) tend to fall into three types:

I. Symmetrically reversible, e.g.

far, farther — *near, nearer*

:

not near, less near — *not far, less far*

II. Partly reversible, e.g.

good, better — *bad, worse*

:

not bad, less bad — *not good, less good*

III. Irreversible, e.g.

brilliant, more brilliant — *stupid, more stupid*

:

not stupid, less stupid — *not brilliant, less brilliant*

Note that implicitly graded specialized terms can themselves be taken as new points of departure for grading, e.g. *more than good, less than bad = better than bad.*

(c) *Three-term sets.* These are not as common as type (b) (two-term sets) in ordinary usage but are constantly required for accurate grading. Generally one takes opposite terms of type (b) and constructs a middle term by qualifying the upper-graded one, e.g. *bad, averagely* (or *moderately* or *normally*) *good, good.* Sometimes a middle term comes in by way of transfer from another field, e.g. *bad,*

fair, good. Specific middle terms, however, tend to gravitate toward one or the other of the two opposites, e.g. *fair,* on the whole, leans more to good than bad. If we further insert *poor*, again transferred from another field, we get type (d), four-term sets: *bad, poor, fair, good.* (The reason why *poor*, when transferred to the *bad*:*good* scale, does not quite fall in with *bad* is that *poor*:*rich* has not quite as great a scale amplitude as *bad*: *good* (zero to maximum) but is felt as corresponding rather to a scale of little to maximum. *Zero, lower average, higher average, much* is the implicit measure of *having nothing* (= *destitute, penniless*) *having little* (= *poor*), *having a moderate amount* (= *fairly well off*), *having much* (= *rich*). Hence *poor* stresses *something, though little* and cannot entirely parallel *bad*, which includes its logical extreme.) On the whole, three-term sets do not easily maintain themselves because psychology, with its tendency to simple contrast, contradicts exact knowledge, with its insistence on the norm, the "neither nor." True three-term sets are probably confined to such colorless concepts as: *inferior, average, superior*, in which the middle term cannot well be graded.

(d) *Four-term sets: cold, cool, warm, hot.* These are formed from type (b) by grading each of the opposites into a psychologically lower and higher. The new terms become psychological opposites (or sub-opposites) of a smaller scale. It is important to note that the two middle terms do not correspond to the middle term of type (c) (three-term sets), i.e. *warm* is psychologically no nearer to *cool* than *superior* is to *inferior.* In other words, *cold-cool* contrasts with *warm-hot* precisely as does *very bad-bad* with *good-very good.* The problem of connecting *cool* and *warm* has to be solved, psychologically, by blend-grading (*coolish: warmish, lukewarm*) or, more objectively, by norming (*of ordinary, normal, temperature*). As usual, the normed term is quasi-scientific rather than popular in character.

More complex linguistic sets are of course possible. We may summarize these analyses of the grading process by saying that logical grading is of the open-gamut type and may be with or without reference to an objective norm or statistical average, while psychological grading and linguistic grading tend strongly to emphasize closed-gamut grading, whether of the conjunct or disjunct type, and have difficulty in combining the notions of grading and norming into that of a normed field within which grading applies. Furthermore, it is worth noting that the difference between explicit and implicit grading is of little importance logically, of considerable importance psychologically (with constant conflict of the relative and fixed points of view), and of paramount importance linguistically.

4. IMPLICATIONS OF MOVEMENT IN GRADING

The main operational concepts that we have used in developing our notions of grading up to this point have been: the successive envelopment of values by later ones (giving us a set of "lesses" in an open series); the establishment of a norm somewhere in such an open series; the placement of values "above" and "below" this norm; the contrasting of specific gradable values which belong to the same class; the establishment of continuity between such contrasting values

by means of intercalation; and certain implicit directional notions (upward,[3] e.g. *good*:*better*, *bad*:*less bad;* downward,[3] e.g. *good*:*less good*, *bad*:*worse;* contrary, e.g. *good-better*:*bad-worse*).

The directional ideas so far employed have merely implied a consistent increase or decrease in value of the terms which are seriated and graded. Thus, of a set of terms "a, b, c, · · ·, n," in which a is less than any of the terms "b, c, · · ·, n," and b is less than any of the terms "c, · · ·, n," and c is less than any of the terms "· · · n," and no term is more than n, we have established an upward grading direction, consistently from less to more, but the terms themselves are not necessarily thought of as having been arrived at either by moving up from a or down from, say, c. Logically, as mathematically, *b increased from a* = *b decreased from c*. Psychologically, however, and therefore also linguistically, the explicit or implicit trend is frequently in a specific direction. It is this tendency to slip kinaesthetic implications into speech, with the complicating effects of favorable affect linked with an upward trend and of unfavorable affect linked with a downward trend, that so often renders a purely logical analysis of speech insufficient or even misleading.

We can easily test the kinaesthetic aspect of grading by observing the latent direction and associated feeling tone of an implicitly graded term like "few." If some one asks me "How many books have you?" I may answer "A few," which is, on the whole, a static term which, though indefinite, takes the place of any fixed quantity, say 25, deemed small in this particular context. But if I answer, "I have few books," the questioner is likely to feel that I have said more than is necessary, for I have not only fixed the quantity, namely "a few," but implicitly added the comment that I might be expected to have a larger number. In other words, "few" suggests grading downward from something more, while "a few" is essentially noncommittal on the score of direction of grading. The difference here in implicit grading is not one of magnitude, but of direction only. The psychological relation between "a few" and "few" is very similar to the psychological relation between "nearly" and "hardly," which belong to the conceptual sphere of gauging.

Can "a few" be given an upward trend? Not as simply and directly as the change to "few" gives a downward trend, but there are many contexts in which the upward trend is unmistakable. If I am told "You haven't any books, have you?" and answer "Oh yes, I have a few," there is like to be a tonal peculiarity in the reply (upward melody of end of "few") which suggests upward grading from zero. Language, in other words, here ekes out the notional and psychological need for an upward-tending quantitative term as best it can. If I use "quite," which has normally an upward-tending feeling tone, and say "Quite a few," the kinaesthetic momentum carries me beyond the static "a few," so that "quite a few" is well on toward "a considerable number."

The kinaesthetic feeling of certain graded terms can easily be tested by trying

[3] "Upward" and "downward" are used in the sense of "in the direction of increase" and "in the direction of decrease" respectively. This purely notional kinaesthesis may be, and probably generally is, strengthened by a concomitant spatial kinaesthesis.

to use them with terms whose kinaesthetic latency is of a different nature and noting the baffled effect they produce due to implied contradictions of movement. Thus, we can say "barely a few" or "hardly a few" because "a few" is conceived of as a fixed point in the neighborhood of which one can take up a position or toward which one can move, positively or negatively. But "nearly few" is baffling, and even amusing, for there is no fixed "few" to be near to. "Hardly few" is psychologically improper too, for "hardly" suggests a falling short, and inasmuch as "few" is downwardly oriented, it is hard to see how one can fall short of it. "Hardly few" has the same fantastic improbability as the concept of A moving on to a supposedly fixed point B, which it "hardly" expected to reach, and finding that B was actually moving toward A's starting point, and eventually reaching it, without ever passing A. Again, "all but" requires a psychologically fixed term to complete it, e.g. "all but half," "all but a few." "All but few" suggests a remainder which is not even a remainder. Again, "all but quite a few," even if "quite a few" is no more factually than a small proportion of the whole, is psychologically difficult because "quite a few" is no more static than "few." The "all but" form is implicitly static, hence "all but few" and "all but quite a few" ring false, involving, as they do, down-tending and up-tending elements respectively.

5. THE CONCEPT OF EQUALITY

We are now in a position to arrive at a simple psychological conception of "equal to." "Equal to" may be defined as the quantitative application of the qualitative "same as," "more than" and "less than" being the two possible kinds of quantitative "different from." But it seems more satisfactory, on the whole, to define "equal to" in a more negative spirit, as a more or less temporary point of passage or equilibrium between "more than" and "less than" or as a point of arrival in a scale in which the term which is to be graded is constantly increasing or diminishing. In other words, if we take q as defined to begin with, we can give meaning to $a = q$ by saying that: (1) a is less than q to begin with, gradually increases while still less than q, and is later found to be more than q, having passed through some point at which it was neither less than nor more than q; or (2) a is more than q to begin with, gradually decreases while still more than q, and is later found to be less than q, having passed through some point at which it was neither more than nor less than q; or (3) a is less than q to begin with, gradually increases while still less than q, and finally rests at some point at which it is neither less than nor more than q; or (4) a is more than q to begin with, gradually decreases while still more than q, and finally rests at some point at which it is neither more than nor less than q. These four types of equality may be classified as:

I. Explicitly dynamic
- (1) While increasing toward and away from
- (2) While decreasing toward and away from

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II. Implicitly dynamic { (1) Having increased toward / (2) Having decreased toward }

A fifth type of equality, that of kinaesthetic indifference, is the limiting or neutral type which alone is recognized in logic:

III. Non-dynamic: Statically "equal to."

So far are these psychological distinctions from being useless that, as a matter of fact, a little self-observation will soon convince one that it is hardly possible to conceive of equality except as a medium state or equilibrated state in an imagined back and forth of "more than" and "less than." It is safe to say that if we had no experience of lesses increasing and of mores decreasing, one could have no tangible conception of how obviously distinct existents, occurrents, and modes could be said to be "equal to each other" in a given respect.

6. THE CLASSIFICATION OF TYPES OF GRADING JUDGMENT

The classification of "equals" applies, of course, equally well to "mores" and "lesses," so that we have, psychologically speaking, 15 fundamental judgments of grading to deal with, of which the 3 logical ones ("more than," "equal to," and "less than") are the kinaesthetically neutral judgments. The best way to understand this enlarged grading scheme is to express it symbolically. Let $a \rightarrow q$ be understood to mean "a is less than q and is increasing toward it," $a \leftarrow q$ to mean "a is less than q and is decreasing away from it," $q \rightarrow a$ to mean "a is more than q and is increasing away from it," $q \leftarrow a$ to mean "a is more than q and is decreasing toward it." In other words, "to the left of" means "less than," "to the right of" means "more than," while an arrow pointing to the right means "increasing," an arrow pointing to the left means "decreasing." An arrow pointing downward will mean "having increased," an arrow pointing upward will mean "having decreased," and an arrow superimposed will mean "equal to, with implication of actual or prior movement." We then have the following symbolically expressed notional scheme of grading judgments which can be made of two entities of the same class, a and q, of which q is supposed to be known and fixed. In the symbolism a will be understood as the subject of the implied proposition.

TYPES OF GRADING JUDGMENT

I. Explicit dynamic	*Increasing* 1. $\rightarrow$ q	6. $\overrightarrow{q}$	11. q $\rightarrow$
	Decreasing 2. $\leftarrow$ q	7. $\overleftarrow{q}$	12. q $\leftarrow$
II. Implicit dynamic	*Increased* 3. $\downarrow$ q	8. $\underset{\downarrow}{q}$	13. q $\downarrow$
	Decreased 4. $\uparrow$ q	9. q$\uparrow$	14. q $\uparrow$

III. Nondynamic 5. $\begin{cases} a = q \\ q = a \end{cases}$ 10. $\begin{cases} a = q \\ q - a \end{cases}$ 15. $\begin{cases} a > q \\ q < a \end{cases}$

These symbols may be read as follows:

1. "is being less than q, though increasing" (= "still falls short of")
2. "is being less than q, and decreasing" (= "falls shorter and shorter of")
3. "is less than q, though increased from still less" (= is still short of")
4. "is less than q, and decreased from more" (= "is even short of")
5. "a is less than q" (= is short of) = "q is more than a"
6. "is equalling q, on its way from less to more"
7. "is equalling q, on its way from more to less"
8. "is equal to q, having increased to it"
9. "is equal to q, having decreased to it"
10. "is equal to q"
11. "is being more than q, and increasing" (= "exceeds more and more")
12. "is being more than q, though decreasing" (= "still exceeds")
13. "is more than q, and increased from less" (= "is even in excess of")
14. "is more than q, though decreased from more" (= "is still in excess of")
15. "a is more than q" (= "is in excess of") = "q is less than a."

The symbols for nos. 5, 10, and 15 are of course the ordinary mathematical ones, $a < q$ and $q > a$ being considered equivalent notations. The sign of equality, $=$, may, if one likes, be looked upon as the neutralized forms of nos. 6 and 7: $\rightleftarrows$.

In order to give more reality to these theoretically distinct types of grading, it may be of some service to give simple examples of them. For this purpose we shall take *5* (*miles*, *pounds*, *hours*) as illustrative of q, thus applying our notions of grading to the sphere of quantity.

1. "He has run *less than five miles*" : $\rightarrow$ 5 (answer to question: "How far has he run by now?")

2. "He has *less than five hours* to finish his job" : $\leftarrow$ 5 (answer to question: "How much time can he count on to finish his job?")

3. "He ran until he came to a point that was *less than five miles* from his starting point": $\downarrow$ 5 (answer to question: "How far had he got when he stopped running?")

4. "He got weaker and weaker until he could lift *less than five pounds*" : $\uparrow$ 5 (answer to question: "How much could he still lift when he had to give up?")

5. "Jersey City is *less than five miles* from New York": a $<$ 5 (answer to question: "How far [a, i.e. required distance] is Jersey City from New York?")

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6. "He has run (*as much as*) *five miles*": 5 (answer to question: "How far has he run by now?")

7. "He has (*just, still*) *five hours* to finish his job: 5 (answer to question: "How much time can he count on to finish his job?")

8. "He ran until he came to a point that was (*just, as much as, already*[4]) *five miles* from his starting point": 5 (answer to question: "How far had he got when he stopped running?")

9. "He got weaker and weaker until he could lift (*just, only, no more than*) *five pounds*": 5 (answer to question: "How much could he still lift when he had to give up?")

10. "A is (*just*) *five miles* from B": a = 5 (answer to question: "How far [a] is A from B?")

11. "He has run *more than five miles*": 5 → (answer to question: "How far has he run by now?")

12. "He (*still*) has *more than five hours* to finish his job": 5 → (answer to question: "How much time can he count on to finish his job?")

13. "He ran until he came to a point that was (*even*) *more than five miles* from his starting point": 5 ↓ (answer to question: "How far had he got when he stopped running?")

14. "He got weaker and weaker until he could lift *hardly more than* five pounds": 5 ↑ (answer to question: "How much could he still lift when he had to give up?")

15. "Philadelphia is *more than five miles* from New York": 5 < a (answer to question: "How far [a] is Philadelphia from New York?")

7. AFFECT IN GRADING

It will be observed that such terms as *as much as, just, still, already, only, no more than, even, hardly*, and others not illustrated in our examples help along, as best they can, to bring out the latent kinaesthetic element in the logical concepts "less than," "equal to" and "more than" when these are applied to experience, but at best they are only a weak prop. Most languages suffer from the inability to express the explicitly dynamic, implicitly dynamic, and non-dynamic aspects of grading in an unambiguous manner, though the notional framework of fifteen grading judgments that we have developed is intuited by all normal individuals. Such English terms as we have suggested are really unacceptable for two reasons: 1, they are transfers from other types of judgment than dynamic and non-dynamic grading (e.g. "only" is properly an exclusive limiter; "hardly" and "just" are goal-gauging limiters; "still" has time implication, at least in origin); and 2, they unavoidably color the judgment with their latent affect of approval or disapproval (e.g. "as much as" smuggles in a note of satisfaction; "only" and "hardly" tend to voice disappointment).

[4]More idiomatic in German: *schon*.

Even the simple graders "more than" and "less than" tend to have a definite affective quality in given contexts. Thus, if a quantitative goal is to be reached by increase, say "ten pages of reading," *more than* necessarily has an approving ring (e.g. "I have *already* read *more than three pages*," though it may actually be less than four), *less than* a disapproving ring (e.g. "I have *only* read *less than eight pages*," though it may actually be more than seven). On the other hand, if the quantitative goal is to be reached by decrease, say "no more reading to do," *more than* has a disapproving ring (e.g. "I have *still more than three pages* to do," though actually less than four remain to be done), *less than* an approving ring (e.g. "I have *less than eight pages* to do," though more than seven pages remain to be done out of a total of ten). In other words, grading and affect are intertwined, or, to put it differently, *more than* and *less than* tend to have both an objective grading value and a subjective grading value dependent on a desired or undesired increase or decrease. This means that linguistic awkwardnesses arise when it is desired to combine an objective *more than* with a subjectively desired decrease or an objective *less than* with a subjectively desired increase. Thus, if the *more than three days* in "I have *more than three days* to wait" is to convey the approving connotation of "only four or five days," we cannot say "I have *only more than three days* to wait" (as contrasted with a possible *more than ten days*) but must recapture the note of approval by minimizing the implied excess, hence "I have *only a little more than three days* to wait." An approved *more than* (a slight quantity) in a desiredly decreasing scale, though logically defensible, goes against the psychological grain of language. Again, it is hard to say "I have *only more than fifty dollars* in the bank," for *fifty dollars* plus *a slight amount* (by implication) is on an upgoing trend, as it were. We have to grade down from *fifty-one dollars*, say, and say "I have *less than fifty-one dollars in* the bank." To put it differently, if $50.99 is disapproved of, it must be graded downward as *less than fifty-one dollars;* if $50.01 is approved of, it can be graded upward as *more than fifty dollars*. The difficult word *hardly* frequently reorients the normally implied affect, hence "I have *hardly more than three days* to wait" (approval), "I have *hardly more than fifty dollars* in the bank" (disapproval).

If we had a subjective grading symbolism that was independent of objective grading, it would be possible to convey very compactly every possible type of grading judgment—static, implicitly dynamic, and explicitly dynamic grades independently combined with neutral, approving, not disapproving, disapproving, and not approving affect. How complex, in actual speech, our grading judgments, or rather intuitions, really are from a psychological standpoint, however simple they may seem to be from a purely logical or merely linguistic standpoint, may be exemplified by considering the meanings of such apparently simple statements as "I have *three pages* to read," "I have *more than three pages* to read" and "I have *less than three pages* to read." In the first place, it makes a difference if "three pages" (or "reading matter equal to three pages") is conceived non-dynamically or dynamically, e.g. "three pages as an assigned task" (grade 10: non-dynamic "equal to") or "more than three pages in a rapidly accumulating series of MS pages submitted for approval" (grade 11: explicit dynamic increasing "more than") or "more than three pages still to do in the passage from a total

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of ten pages to do to the goal of no pages left to do" (grade 12: explicit dynamic decreasing "more than") or "less than three pages yet accumulated in a long MS report which one desires to read" (grade 3: implicit dynamic increased "less than"). Ordinarily, the affective valuation involved in such statements does not clearly rise in consciousness because "more than" and "less than" pool the energies, as it were, of the grading process itself and the approval or disapproval of increase (growing exhilaration, growing fatigue) or decrease (growing relief, growing disappointment). We cannot possibly go into all the involvements of this very difficult field of inquiry, but a general idea of its nature may be had by considering one case, say the explicit dynamic decreasing forms of "less than" (grade 2), "equal to" (grade 7) and "more than" (grade 12).

Our type statements will be "less than three pages (to read)" "(still as much as) three pages (to read)" and "more than three pages (to read)." These will be symbolized, in the first instance, by $\overleftarrow{}$ 3, 3, and 3 $\overleftarrow{}$ respectively. If, in the statement "I have less than three pages to read," the reading is conceived of as a task which is to be accomplished, say a certain amount of Latin to be prepared for translation, the statement will be normally interpreted as implying approval of decrease (growing relief), the implication being that of "only." Had we wished to imply disapproval of increase (growing fatigue), we should normally have put it not at "less than three pages" but at "more than two pages," with an implication of "still." We could combine the form of approving "less than" statement with that of disapproving "still" and say "I have less than three pages to read, *to be sure*, *but* there is *still* some of my assignment to read." In other words, when the goal, zero, is approved, any form of statement implying decrease toward that goal involves approval, and the factual disapproval of having still so much left to do has normally to be rendered by terms implying reversal of judgment, such as *to be sure*, *but*, *still*. Our linguistic awkwardness in expressing disapproval of a state which is kinaesthetically committed, as it were, to approval, is on a par with, though less obviously helpless than, such periphrases for the potential mode as "He will come, he will not come," a naive substitute for "Perhaps he will come" or "He may come." Let us, for the sake of brevity, reduce the complete circle of valuation in judgment to the two simple forms of approval and disapproval, symbolized respectively by ⌒ and ⌣. Then $\overleftarrow{\frown}$ 3 symbolizes an explicit dynamic decreasing "less than 3" which is approved of, the "less than 3" of growing relief inadequately rendered in English by "less than 3" or the rather unidiomatic "already less than 3" or the round-about "only 3, in fact less." And

$$\overleftarrow{\smile} 3$$

symbolizes an explicit dynamic decreasing "less than 3" which is disapproved of, the "less than 3" of growing fatigue, which cannot easily be rendered in English except by such periphrases as "still some, though less than 3."

Further consideration of the implied "only" and "still" of these statements shows that they may indicate exactly the opposite affects if we assume that the goal of decrease is not desired but resisted. Thus, if my desire is to read all I

can get, an approving $\leftarrow\!\!\frown 3$ can not imply that I am relieved to find that what I still have left to read is even less than three pages, but that I am glad to know that while there are less than three pages left, at least there is *still* left more than nothing. This, then, is an approving "still." Correlatively, the disapproving "only" of $\leftarrow\!\!\smile 3$ implies that neither the quantity on hand nor its proximate extinguishment is approved of. In other words, two distinct affective judgments are involved, that of the grade itself and that of the goal of its implied tendency. How can we distinguish the $\leftarrow\!\!\smile 3$ of growing fatigue from the $\leftarrow 3$ of growing disappointment? Obviously we must have some way of indicating the affect attaching to the factual goal, which gives the whole grading process its significance. We shall therefore use a symbol for limit of tendency, $\underset{q}{|}$, in which q stands for any quantity, and express the four affective types of explicit dynamic decreasing "less than" as follows:

1. $\overset{\frown}{\underset{\circ}{|}} \leftarrow\!\!\frown 3$ (both decreasing quantity and zero-limit are approved: "I have *only* [a little] less than 3 pages [still] to read"
2. $\overset{\frown}{\underset{\circ}{|}} \leftarrow\!\!\smile 3$ (quantity disapproved, zero-limit approved: "I have *still* to read [only a little] less than 3 pages," "I have *hardly* less than 3 pages [still] to read"
3. $\overset{\smile}{\underset{\circ}{|}} \leftarrow\!\!\frown 3$ (quantity approved, zero-limit disapproved: "I *still* have for reading [but a little] less than 3 pages")
4. $\overset{\smile}{\underset{\circ}{|}} \leftarrow\!\!\smile 3$ (both decreasing quantity and zero-limit are disapproved: "I have *merely* less than 3 pages left for reading")

The four affective types of explicit dynamic decreasing "more than" are as follows:

1. $\overset{\frown}{\underset{\circ}{|}} 3\!\frown\!\leftarrow$ ("I have *only* [a little] more than 3 pages [still] to read," "I have *hardly* more than 3 pages [still] to read"
2. $\overset{\frown}{\underset{\circ}{|}} 3\!\smile\!\leftarrow$ ("I have *still* to read more than 3 pages")
3. $\overset{\smile}{\underset{\circ}{|}} 3\!\frown\!\leftarrow$ ("I *still* have for reading more than 3 pages")
4. $\overset{\smile}{\underset{\circ}{|}} 3\!\smile\!\leftarrow$ ("I have *merely* [a little] more than 3 pages left for reading," "I have *hardly* more than 3 pages left for reading")

And the four affective types of explicit dynamic decreasing "equal to" or "as much as" are as follows:

1. $\overset{\frown}{\underset{\circ}{|}} \overset{\leftarrow\frown}{3}$ ("I have *only* [no more than] 3 pages [still] to read")
2. $\overset{\frown}{\underset{\circ}{|}} \overset{\leftarrow\smile}{3}$ ("I have *still* to read [no less than, as much as] 3 pages")
3. $\overset{\smile}{\underset{\circ}{|}} \overset{\leftarrow\frown}{3}$ ("I *still* have [no less than, as much as] 3 pages for reading")
4. $\overset{\smile}{\underset{\circ}{|}} \overset{\leftarrow\smile}{3}$ ("I have *merely* [as much as] 3 pages left for reading")

Needless to say, analogous distinctions are to be made for the other grading cases. Here, as in every other phase of linguistic inquiry, we find that the more

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closely we study actual linguistic forms, the more we are driven to realize that they never express merely static, affectively neutral, concepts and judgments, but classes of concepts and judgments in which nuclear notions, capable of logical definition, are colored by unavowed dynamic and affective determinants. These determinants must be laboriously ferreted out and set in their own configuration of possible scale or types, so that the nuclear notions themselves may stand out with logical rigor. Certain of these dynamic and affective determinants are primary or typical, because arising naturally in experience; others are complex, involving a blending of features in logically permissible but psychologically atypical form, as when a logically static concept is blended with a dynamic implication and two opposed affects. So far as the primary, maximally natural, blends of dynamic tendency and affect with logically static grading concepts are concerned, we have probably to reckon with the following five types:

1. "More than" of growing exhilaration: $q \overset{\frown}{\rightarrow} \overset{\frown}{\underset{a}{|}}$
2. "More than" of growing fatigue: $q \overset{\smile}{\rightarrow} \overset{\smile}{\underset{a}{|}}$
3. "Less than" of growing relief: $\overset{\frown}{\underset{a}{|}} \overset{\frown}{\leftarrow} q$
4. "Less than" of growing disappointment: $\overset{\smile}{\underset{a}{|}} \overset{\smile}{\leftarrow} q$
5. "Equal to" of balanced satisfaction: $\left\{\begin{matrix} a \overset{\frown}{\rightarrow} q \\ q \overset{\frown}{\leftarrow} a \end{matrix}\right\}$

The neutral, logical, "more than" is probably derived from nos. 1 and 2 by progressive elimination of upward tendency (stage 1: $q \rightarrow$; stage 2: $q \downarrow$; stage stage 3: $q <$) and affect; the neutral, logical, "less than" is probably derived from nos. 3 and 4 by progressive elimination of downward tendency (stage 1: $\leftarrow q$; stage 2: $\uparrow q$; stage 3: $< q$) and affect; the neutral, logical, "equal to" is probably derived from no. 5 by elimination of balancing (stage 1: $\begin{matrix} a \overset{\frown}{\rightarrow} q \\ q \overset{\frown}{\leftarrow} a \end{matrix}$; stage 2: $a \overset{\frown}{=} q$) and affect (stage 3: $a = q$). Once the kinaesthesis and affect are rooted out of the psychology of grading, the human spirit is free to create richer and more complex meanings by recombining the elements of grading, of direction, of movement, halt, and status, and of immediate and prospective affect, into novel configurations in which inhere conflicts that have been reconciled.

8. THE SUPERLATIVE

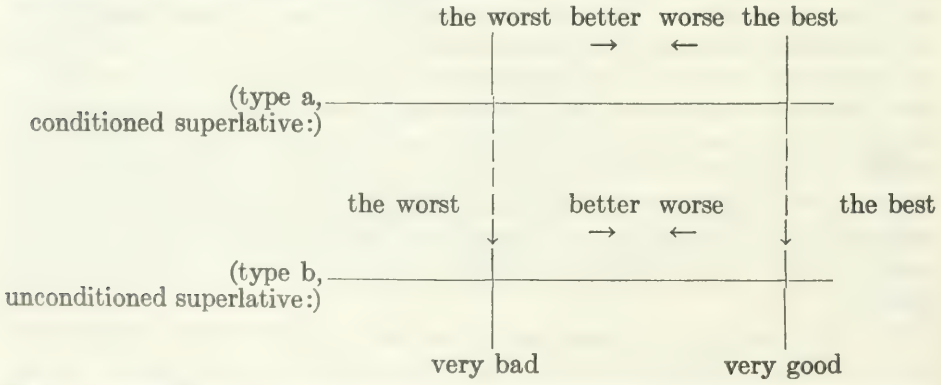
"More than," "less than," and "equal to" are the most general grading terms and concepts we have. Owing to our habit of thinking of such triplets as *good-better-best*, *bad-worse-worst*, *famous-more famous-most famous*, and *famous-less famous-least famous* as possessing a logical structure which is analogous to their linguistic form, we tend to consider the concepts expressed by *most* and *least* as of the same nature as *more than* and *less than*. A little reflection shows that

this feeling is an illusion and that the linguistically suggested proportion *good*: *better* = *better*: *best* is logically incorrect. If a, b, and c are arranged in a series of relative qualities, a may be said to be "good," b "better than" a, and c "better than" b. But c is just as truly "better than" a as it is "better than" b, in fact more unreservedly or *a fortiori* so. We cannot say that c is "best" unless we know either (a), that a, b, and c are the only members of the series that are to be graded, in which case c is "best" not because it is better than b as well as better than a but because there is no other member of the series which is better than it; or (b), that the quality possessed by c is equal to that grade which is known not to be exceeded by any other possible member of the whole class of gradable members. In the former case c may soon cease to be "best" as other members (d, e, f, ···, n) are added to the series, though it always remains "better than" certain other fixed members of it. In the latter case c remains "best" throughout. These two meanings of the superlative form are really quite distinct, though they are often confused linguistically. Type (a), e.g. *the most* ··· *of them*, *the least* ··· *of them*, *the farthest of them*, *the best of them*, *the nearest of them*, *the worst of them*, may be called the "conditioned superlative" or "relative superlative." The other type, (b), e.g. *the most* ··· *possible* (= *as* ··· *as possible*), *the least* ··· *possible*, *the farthest* (*possible*), *the best* (*possible*), *the nearest* (*possible*), *the worst* (*possible*), may be called the "unconditioned superlative" or "absolute superlative." Both represent unique grades, though in differently ordered contexts, at the upper or lower end of a series. If we characterize a class of individuals, say as "good," the criterion of membership, *good*, applies to all; *better* (or *less bad*) applies to all but one of the class, which is thought of as *least good* (or *worst*); *less good* (or *worse*) applies to all but one of the class, polar to the member excluded from the sub-class "better," which is thought of as *best* (or *least bad*); *best* (or *least bad*) applies to only one member, the extreme of the sub-class "better"; and *least good* (or *worst*) applies to only one member, the extreme of the sub-class "less good."

Whether the terms *worst* and *least bad* properly apply to any of the members of the class depends, of course, on whether *good* and *bad* are thought of as mutually exclusive classes separated by a normative line of division (logical grading: A, I, with reference to norm) or as relative terms applying to the "more" and "less" of a single class (logical grading: A, II, with reference to terms of comparison). Hence arise certain ambiguities in the use of *least*. *Least good* may either mean *the least good of good individuals*, i.e. the first grade toward "best" beyond the dividing line of neutrality, as when we say "*The least good*, if good at all, will do"; or, more naturally, *the least good of good and bad individuals*, i.e. *the worst*, as when we say "*The least good* is indistinguishable from the worst." Similarly with *least bad*, except that here it is the normative usage that seems the more natural. Correlative ambiguities, though less easily, may arise for *most*. Paradoxically enough, language so handles *least* and *most* that *least good* (*of good ones*) and *least bad* (*of bad ones*) are often next door to each other, though *least good* and *least bad* may in other contexts be polar extremes, while *best* and *worst* are typically polar extremes. The set *best* (*of bad ones*) and *worst* (*of good ones*)

is not generally thought of as a natural neighborhood. It is only in "open-gamut grading" (psychological grading: B, 1) that *least* and *most* can be defined as identical concepts arrived at by opposite movement of grading (*farthest* = *least near*, *nearest* = *least far*). We may conveniently speak of "open-gamut superlatives" (of which there are only two possible in the unconditioned type, namely *most* and *least*, e.g. *best* and *worst*) and of "closed-gamut superlatives" (of which there are typically four in the unconditioned type, e.g. *best*, *least good*, *least bad*, *worst;* or any higher even number, depending on the nature of the grading).

It is interesting to note that the superlative form is often used to denote a high grade, but not necessarily an apical grade, of the graded quality. Thus, Latin *amatissimus* means not only "most beloved, the most beloved" but also "greatly beloved." Similarly, we say in English, "He had a *most pleasing* personality," i.e., not "*the most pleasing* personality" among some implied number of individuals but simply "a *very pleasing* personality." It is probable that this logically unreasonable, but psychologically somehow inevitable, usage is due to a transfer of conditioned superlatives (type a) to the grading gamut in which unconditioned superlatives (type b) occur as polar points. The following diagram illustrates the process for unnormed grading:



In other words, a conditioned superlative, true of some limited range of instances, becomes, when seen in the wider perspective of all possible instances, not a true superlative at all but an up-graded or down-graded comparative fixed at some point psychologically near the unconditioned extremes. This process at the same time involves a translation of explicit superlative grading into implicitly quantified grading, a more sophisticated type of grading judgment. Hence, to reverse the direction of transfer, it seems natural, because psychologically archaic, to see such judgments as "very bad" or "very good" as conditioned superlatives in an imaginary series in which all other graded terms fall below. It is as though one felt that what is merely "very good" in this context or the context of all values is actually "the best" in some other imagined context.

9. POLAR GRADING

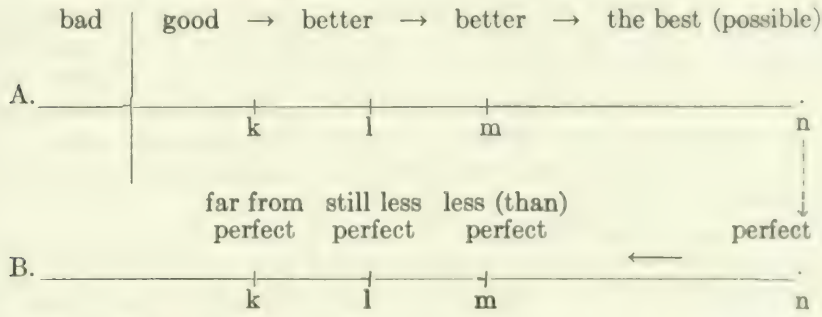
At first sight it seems that the differences between explicit and implicit grading can not be carried out for the superlative. But there are, as a matter of fact,

quite a number of implicitly superlative terms which have, however, this linguistic and psychological peculiarity, that they are not felt as end points of a graded series but as points of polar normality. These outer points, though logically arrived at by the cumulative grading process that gives us "most" and "least," are not, psychologically speaking, worked up to *via* "more than" but can only be fallen short of *via* "less than." If, for instance, a series

a, b, c, ··· , k, l, m, n

is graded via increments of "more than" up to n, "the most," and we then accept this n as a new norm, we note: 1, that there can be no up-graded terms which are "more than" n; 2, that such terms as c, ···, l, m, which could in the first instance be defined as progressively "more than" such lower terms as b, ···, k, l, respectively, can now only be defined in an opposite sense as progressively "less than" the unique term n. We thus arrive at what amounts to a new type of grading, which we may term "polar grading."

A good example of a transfer from ordinary grading to polar grading is shown in the following normed scheme:



Observe that the "less perfect" of B is really as illogical as "more perfect" would be. It may be considered an ellipsis for the logical "less than perfect" or "less nearly perfect" based on a secondary extension of the range of meaning of the term "perfect." The superlative implication of "perfect," which should make of it a unique and ungradable term, tends to be lost sight of for the simple reason that it belongs to the class of essentially gradable terms (e.g. "good"). Such terms as "less perfect" are psychologically blends of unique terms of the type "perfect" and graded terms of the type "less good." The polar term is stretched a little, as it were, so as to take in at least the uppermost (or nethermost) segment of the gradable gamut of reality. Observe that at the worst the term which is farthest in significance from the unique value of the polar term under which it comes does not ordinarily relapse into the normal area of the term which implicitly underlies this polar term. Thus, "least perfect" is generally better than the merely normal "good," e.g. "the least perfect of these poems," which could hardly be said of a poem that did not belong to a set of poems which could be described, most of them, as "perfect." On the other hand, a complication arises when we fix the polar point not so much objectively as on the basis of a desired upper norm, as when we say "even the least perfect of God's creatures," which

is a way of saying "even the worst of God's creatures, of whom we would all were perfect." As a result of such affective interferences, polar terms may be secondarily graded down (or up) to their polar contraries.

"Perfect" is perhaps the best example of a polar term. "Complete" and "full" are others of the implicitly up-graded type; "empty" and "barren," of the implicitly down-graded type. Implicit superlatives and polar grading offer many psychological subtleties, of which we have only touched the more obvious. Through the habit of using polar terms only to indicate some measure of falling short of their proper significance they may finally take on a less than polar function. Thus, "perfect" comes to mean to some people, and to all people in certain contexts, merely "very good." This paves the way for the secondary grading of polar terms in a positive direction, e.g. "more perfect" and "most perfect." Logically such terms might be interpreted to mean "more nearly perfect" and "most nearly perfect" (conditioned superlative with polar goal); actually, that is psychologically, they denote rather "better" and "best" in an upper tract of "good."

This paper was finished, in essentially its present form, many years ago as part of a larger study carried on, in collaboration with Professor W. Collinson, for the International Auxiliary Language Association (IALA). My original purpose was to carry the analysis of grading considerably further but it seems best to offer this fragmentary contribution to semantics in the hope that others may be induced to explore the sadly neglected field of the congruities and non-congruities of logical and psychological meaning with linguistic form.

My thanks are due the IALA and Mrs. Alice V. Morris for permission to publish this paper here. I am also indebted to Mrs. Morris for her careful reading of the manuscript and for a number of critical observations from which I have profited greatly.

E. S.

Editorial Note

Posthumously published in *Philosophy of Science* 11:2 (March 1944), 93–116. [Reprinted in Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 122–149]

Section Six

Patterns of Language in Relation to History and Society (1931–1933–[1947])

Introduction:

Sapir's General Linguistics in the 1930s

This section contains articles written by Sapir in the early 1930s. The last paper, "The Relation of American Indian Linguistics to General Linguistics," was written after 1933, but did not appear before Sapir's death; it was published posthumously from a manuscript contained in the Boas collection in the Library of the American Philosophical Society.

Although this section contains papers of divergent scope and purpose — three of the papers were written for the *Encyclopaedia of the Social Sciences*, one was written for a handbook on methods in social sciences, another item is the synopsis of a lecture given by Sapir, and the paper on the psychological reality of phonemes appeared in a special issue of the *Journal de Psychologie*,[1] intended to show the manifold connections between linguistics and psychology — there are a number of unifying features linking these papers:

(1) There is first the overall presence of the notion of "patterning" in language, which Sapir spots at various levels: that of the insertion of language within society, that of its ties with the individual, then also the level of patterning of language throughout history, and, basically, the level of language structure itself.[2]

(2) The papers in this section also testify to Sapir's broadening of linguistics as a social and cultural science; they are thus in perfect harmony with Sapir's publications of the same period on sociology and on the psychology of the individual.

(3) As publications in general linguistics the papers also testify to the continuity of the ideas developed already in Sapir's book *Language* (1921); it is striking to see how the gist of that book, written by Sapir in his mid-thirties, remained intact throughout Sapir's later writings, albeit enriched with new data and integrated in a much more comprehensive view on the social and psychological status of language (see Sapir's writings included in *The Collected Works of Edward Sapir*, vol. III).

(4) A final recurrent feature is the emphasis put on methodological aspects of linguistic work, and especially the need to check generalizations about language through a careful, objective analysis of languages belonging to families other than the one(s) the linguist may be acquainted with.

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[1] This special issue of the *Journal de psychologie normale et pathologique* was devoted to "Psychologie du langage"; it is divided into six sections: "Théorie du langage", "Linguistique générale", "Système matériel du langage", "Système formel du langage", "Acquisition du langage" and "Pathologie du langage". The list of contributors includes, apart from Sapir, Ernst Cassirer, Albert Sechehaye, Witold Doroszewski, Karl Bühler, Antoine Meillet, Joseph Vendryes, Piero Meriggi, Viggo Brøndal, Antoine Grégoire, Marcel Cohen, Nikolaj Trubetzkoy, Jacques van Ginneken, Alf Sommerfelt and Otto Jespersen. Sapir's text is included in the section "Système matériel du langage".

[2] The first classical statement by Sapir was in his 1925 article "Sound Patterns in Language", *Language* 1 (1925) 37–51 (reprinted here in section III).

In "The Concept of Phonetic Law," written for an audience of social scientists,[3] Sapir discusses a methodological problem. The topic is a classic theme of historical-comparative grammar and modern linguistics, viz. the notion of phonetic law. From the very outset, Sapir rejects the older naturalistic conception of phonetic laws as absolute regularities:[4] phonetic laws are to be seen as a posteriori generalizations, the validity of which is limited in time and space. They are "laws of formulas" (p. 297; here, *formulas* should be understood as correspondences relating linguistic forms).[5] Phonetic laws are set up by inference; they are based on observed regularities (and on the general assumption of the regularity of change[6]), and express a transitional directionality (p. 298).[7]

The purpose of Sapir's article[8] is to show that the type of phonetic laws posited by scholars in the field of Indo-European, Semitic or Finno-Ugric languages is also attested in "primitive" languages, such as the American Indian languages. The general implication is that the comparative method as used in Indo-European or Semitic comparative grammar is equally valid for American Indian languages. Interestingly, the exemplification[9] is first drawn from the work of the other key figure of American linguistics in the first half of the 20th century, Leonard Bloomfield. Bloomfield's work on comparative Algonkian[10] is presented here from the point of view of its methodological interest, which lies in the establishing of proto-forms through recursive (and "crossed") triangulation of forms from parent languages/dialects. This technique normally leads to positing a maximal number of proto-forms in order to account for split correspondence sets (reconstruction favours "backwards" splitting rather than merging, unless there

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[3] The text was written in 1928, and revised by Sapir in 1929.

[4] See Gisela Schneider, *Zum Begriff des Lautgesetzes in der Sprachwissenschaft seit den Junggrammatikern* (Tübingen, 1973); Terence H. Wilbur ed., *The Lautgesetz-Controversy: A Documentation (1885–1886)* (Amsterdam, 1977) (with further bibliography).

[5] See p. 298: "phonetic formulas which tie up related words." Elsewhere in the article (p. 302) the term *formula* ("or tag") is used in a different sense, viz. as a reconstructed form in a pattern. Note that the classical statement by Antoine Meillet, *La méthode comparative en linguistique historique* (Paris, 1925, esp. chap. VIII), equates the diachronic laws with "formules générales de changement."

[6] See p. 302. This is the general problem of "induction on induction."

[7] In the absence of external historical evidence, the directionality of a sound change can be stated on the basis of principles of panchronic phonology: such a principle is mentioned here by Sapir (p. 298: "stopped" consonants, i.e. stops or occlusives, more often become spirants than vice versa).

[8] Sapir's article and his comparative method are discussed, from the point of view of Athabaskan and Algonkian comparative linguistics, by Michael Krauss ("Edward Sapir and Athabaskan Linguistics") and I. Goddard ("Sapir's Comparative Method"), in *New Perspectives in Language, Culture and Personality: Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 Oct. 1984)*, edited by William Cowan, Michael K. Foster and Konrad Koerner (Amsterdam/Philadelphia, 1986), pp. 147–190 and 191–214.

[9] A few years earlier Sapir had discovered a phonetic law in Chinook; see "A Chinookan Phonetic Law", *International Journal of American Linguistics* 4 (1926), 105–110 [reprinted in *The Collected Works of Edward Sapir*, vol. VI, pp. 275–280].

[10] Another major contributor to the comparative grammar of Algonkian languages was Truman Michelson; Sapir, however, was not a great admirer of Michelson's work.

is clear evidence of analogical processes).[11] The reconstructed proto-forms that Bloomfield had postulated were confirmed by the data he later found in the Swampy Cree dialect of Manitoba.[12]

Sapir then gives a parallel example from his own work in Athabaskan, which concerns the treatment of initial consonants. Here also the reconstruction posited on the basis of the application of the principle of "phonetic law" was later confirmed by Sapir's fieldwork on the Hupa language (pp. 303–305).

The demonstration given is, of course, confined to examples of diachronic methodology, but Sapir's concluding remarks extend beyond the field of historical linguistics: apart from emphasizing that language patterns fit within cultural behaviour (p. 306),[13] he also points out that what is fundamental in language and in linguistic description is the "pattern," not the "material" (or "content").[14] The linguist should therefore be interested in how changes affect the pattern of language; and Sapir approvingly quotes Bloomfield who wrote that what we call "sound change" is in fact a statement about phonemic change.

"Conceptual Categories in Primitive Languages" is the synopsis of a lecture given by Sapir at the meeting of the National Academy of Sciences in New Haven, 16–18 November 1931. This short abstract testifies to Sapir's comprehensive definition of language[15] as a symbolic organization, serving to express individual and social experiences in a cultural setting. As far as one can judge from the abstract, the lecture stressed the methodological value of comparing languages "of extremely different structures,"[16] and the need for relativizing our conceptions concerning the universality of categories familiar to us.

The specific value of this published abstract lies in its succinct formulation of what later has been called the "Sapir – Whorf hypothesis" on the relationship

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[11] See table I, with 5 different clusters for "Primitive Central Algonkian" (completed with table VI, or table III).

[12] See also Leonard Bloomfield, *Language* (New York, 1933), pp. 359–360 (in the chapter on "Phonetic change") and Bloomfield's article "Algonquian", in Harry Hoijer *et al.*, *Linguistic Structures of Native America* (New York, 1946), pp. 85–129 (§10, with self-correcting note 10).

[13] See also E. Sapir, "The Unconscious Patterning of Behavior in Society", in Ethel S. Dummer (ed.), *The Unconscious: A Symposium* (New York, 1928), pp. 114–142 [reprinted in *The Collected Works of Edward Sapir*, vol. III, pp. 156–172]. For a very explicit demonstration, see K.L. Pike, *Language in Relation to a Unified Theory of the Structure of Human Behavior* (Santa Ana, 1954–1960, 3 parts, reedition The Hague, 1967). For an analysis of Sapir's view of patterning in language and in culture, see Maria Xosé Fernández Cosa, *Edward Sapir en la lingüística actual. Líneas de continuidad en la historia de la lingüística* (Verba, Anexo 54) (Santiago de Compostela, 2004), pp. 191–203 and 234–237.

[14] As noted by Sapir, languages may be different in their sounds but similar or even identical in pattern (p. 304, with reference to Hupa and Chipewyan). For a similar remark with application to the conservation of a pattern in the history of a language (Old High German), see Sapir, *Language* (New York, 1921), pp. 192–193.

[15] See also his article "Language" (1933) [reprinted in this section]

[16] See also "Language" (1933) and "The Relation of American Indian Linguistics to General Linguistics" (1943) [also reprinted in this section].

between language and world view.[17] Here this hypothesis is formulated in terms of the elaboration, within a language, of categories originally abstracted from experience, and the subsequent imposition of these elaborated forms upon "our orientation in the world." As such, each language elaborates its own "system of coordinates," and Sapir likens the incommensurability of languages to the incommensurability of divergent (geo)metrical systems. The notion of language as form seems to have been pervasive in the lecture: in the abstract we find terms such as "formal completeness," "self-contained [...] system," "formal limitations", and "linguistic form." In his lecture Sapir seems to have depicted language as a "mathematical system."

This extremely concise text is a very important testimony on Sapir's "relativistic" view of the relationship between experience of the world and symbolic expression, and his characterization of language as a formal structure and a symbolic device.

The three articles written for the *Encyclopaedia of the Social Sciences* included in this volume[18] exemplify the continuity of Sapir's thought, when compared with some classic statements in his *Language* (1921), but at the same time they also mark the evolution of Sapir's conception of language as related to culture, society and personality.

The article "Language," which opens with a remark on the universality of the phenomenon of language,[19] first defines language as a system of phonetic symbols for expressing experience.[20] Sapir then presents the systemic properties of all languages: their phonetic, phonemic and morphemic structure or patterning.[21] The distinction between phonetic elements and phonemes, between distinct sounds and distinctive sound classes is clearly drawn (pp. 155–156). The levelled patterning of language leads then to a definition of grammar as a system of formal economies; as noted by Sapir, all languages have form,[22] precisely because of this organized economy of patterns. Further on, he compares language structures to "quasi mathematical patterns,"[23] which combine with expressive patterns (p. 158).

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[17] See note 30 in the introduction to section III.

[18] Sapir also contributed articles on "Custom," "Fashion," "Group," "Personality" and "Symbolism" to the *Encyclopaedia of the Social Sciences* [these articles are all reprinted in *The Collected Works of Edward Sapir*, vol. III (section I)].

[19] See E. Sapir, *Language* (New York, 1921), pp. 21–23.

[20] See *Language, o.c.*, p. 7.

[21] The term "morphology" is used (p. 156). On Sapir's use of morphological criteria in typology, see Stephen R. Anderson, "Sapir's Approach to Typology and Current Issues in Morphology", in *Contemporary Morphology*, edited by Wolfgang Dressler, Hans Luschutzky, Oskar Pfeiffer and John Rennison (Berlin/New York, 1990), 277–295.

[22] See also *Language, o.c.*, pp. 132–133.

[23] As in "Conceptual Categories in Primitive Languages" (1931) [reprinted in this section].

Sapir then proceeds to define language as a self-sufficient (p. 156, p. 158) symbolic system, which interpenetrates with experience (p. 157); the relationship between speech and action, which was hardly discussed in *Language* (1921), is given due weight here, a fact which testifies to Sapir's interest in the symbolic nature of language, an increasingly prominent theme in his writings following his reading and discussion of Ogden and Richards's *The Meaning of Meaning*.[24] The section on the definition of language thus includes a discussion of the formal characteristics of language (= its systemic nature) and its psychological characteristics (symbolic system; relation to experience; language as the carrier of qualified expressiveness; the possibility of substitution by secondary systems).

The next section deals with the origin of language,[25] a problem which according to Sapir remains unsolvable from a linguistic point of view. In his brief survey of views and theories proposed in the past, Sapir notes that the basic question of how language emerged has never been answered satisfactorily. He outlines his own view of the evolution of language as a product of a peculiar (symbolic) technique.

The third section deals with the functions of language. Here Sapir discusses the relationship between language and society (language as a force of socialization, and a factor of cohesion, solidarity and intimacy),[26] between language and culture (pp. 159–160), and between language and personality.

The following sections respect to a large extent the structure of Sapir's 1921 book *Language*: they deal successively with language classification, linguistic change, and the (supposed) relations between language, race and culture.

The section on language classification outlines the basic differences between a genetic and a structural classification (pp. 161–163): the two may converge (p. 163), but they are based on very different principles. Genetic classification involves the "technique" of comparative grammar; it has to face the problem that one never can prove that two languages are not (ultimately) related (p. 163). Sapir pays much more attention to structural classification (or typology); while the discussion here is less elaborate than in his book *Language*,[27] the text provides a succinct view of the parameters of synthesis, technique and expression of (relational) concepts.[28] It is interesting to note that Sapir expresses some doubts about the operational character of the latter parameter (p. 162).

Linguistic change has either inherent or external causes, but the borderlines between the two may not always be clear. Inherent change is related to "drifts"

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[24] See the reprint of Sapir's review of *The Meaning of Meaning*, in section III of this volume.

[25] See the writings reproduced here in section I and section II, and *Language* (New York, 1921), pp. 5–7.

[26] One should note Sapir's recognition of the "phatic function" (in Jakobson's terminology) of language, and Sapir's remarks on "small talk" (p. 160).

[27] See *Language*, *o.c.*, chapters IV, V and VI.

[28] In *Language*, *o.c.*, the parameter involves the expression of basic, derivational and relational concepts.

in the language.[29] The levels at which linguistic change operates (phonetic, grammatical, lexical) are briefly discussed by Sapir; the substance of his discussion is fairly traditional, and takes up the gist of his treatment in *Language*, but one will note two new features:

(a) the recognition of the role of age groups;[30]

(b) the importance of bilingual subjects for language variation and change.[31]

The last part of this encyclopedia article deals with language, culture, and race. As in his *Language*,[32] Sapir rejects correspondences established between language forms and cultural forms; the form (grammar) of language is a self-contained, unconscious system which changes only very slowly. Culture is subject to rapid changes of fashion; its nearest linguistic match is in the vocabulary, which reflects cultural changes. As themes of particular interest Sapir singles out taboos and special languages. As to the possible correlation between language, race, and culture, the article —published in 1933!— highlights (misplaced) nationalistic beliefs (or propaganda),[33] and emphatically denies any correlation between language, race and culture.[34] Sapir also notes the phenomenon of language imposition and of language cult (especially for minority languages).[35]

The article ends with a plea for an international language, a theme absent from the book *Language* (1921). Its presence here reflects Sapir's involvement in the question of an international auxiliary language;[36] a more elaborate treatment can be found at the end of the article "Communication," where Sapir emphasizes the need of one language for intercommunication, while noting at the same time the

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[29] In *Language*, *o.c.*, pp. 157–182, Sapir uses the singular "*drift*." On this term, see Yakov Malkiel, "What did Edward Sapir mean by "Drift" ?", *Romance Philology* 30 (1976–77), 622 and "Drift, Slant and Slope: Background of, and variations upon, a Sapirian theme", *Language* 57 (1981), 535–570, and see the literature referred to in note 9 of the introduction to Zellig Harris's review of the *Selected Writings*.

[30] It may be that Sapir was influenced here by the classic statement in Louis Gauchat, "L'unité phonétique dans le patois d'une commune", in *Festschrift Heinrich Morf zur Feier seiner fünfundzwanzigjährigen Lehrtätigkeit von seinen Schülern dargebracht* (Halle, 1905), pp. 175-232; cf. Pierre Swiggers, "Louis Gauchat et l'idée de variation linguistique", in Ricarda Liver – Iwar Werlen – Peter Wunderli (Hrsg.), *Sprachtheorie und Theorie der Sprachwissenschaft: Geschichte und Perspektiven. Festschrift für Rudolf Engler zum 60. Geburtstag* (Tübingen, 1990), pp. 284–298.

[31] Here Sapir may have been indebted to the work of the French Indo-Europeanist and general linguist Antoine Meillet who in the 1910s had recognized the importance of bilingualism for understanding linguistic changes; see P. Swiggers, "La linguistique historico-comparative d'Antoine Meillet: théorie et méthode", *Cahiers Ferdinand de Saussure* 39 (1985), 181-195, "La linguistique historique devant la variation: le cas de Meillet", *Recherches sur le français parlé* 7 (1986), 61-74 and "Le problème du changement linguistique dans l'œuvre d'Antoine Meillet", *Histoire, Épistémologie, Langage* 10:2 (1988), 155–166.

[32] See *Language*, *o.c.*, chapter X.

[33] See also the article "Dialect" [reprinted in this section].

[34] See also "The Relation of American Indian Linguistics to General Linguistics", and note 63 below.

[35] It may be that Sapir relied here on the information provided in Antoine Meillet, *Les langues dans l'Europe nouvelle* (Paris, 1918) and its revised edition [by A. Meillet and Lucien Tesnière], *Les langues dans l'Europe nouvelle* (Paris, 1928).

[36] See sections IV and V in this volume.

dangers of, or obstacles to the process of extending the radius, and of increasing the rapidity of communication: the irruption into the private sphere, cultural degeneration, and the desire of non-understanding (as evidenced by cryptography).

The article "Communication," in which Sapir defines society as a network of understandings and a totality of institutions grounded in acts of communication, puts forward a definition of language as a referential system. For this reality-directed function, languages are self-sufficient everywhere and thus equivalent.[37] Communication, as culturally patterned, involves primary processes — language, gesture (including "intonations"[38]), overt behaviour and "social suggestion" (p. 78)— and a number of secondary techniques. While the primary processes are universal, the secondary techniques are culturally linked. Sapir identifies three main classes of techniques facilitating communication:
(1) transfers or transposed systems: such systems (e.g., writing or morse code) maintain an isomorphism with a primary process-system;
(2) symbolisms used in special situations: these symbolizations (e.g., railroad signs, smoke signals) are more restricted in referential scope, and more dependent on contiguity;
(3) physical conditions for extending communication.
With respect to the recent increase of the radius and rapidity of communication, Sapir formulates some thoughts on the "opening up" of the world and the diminished importance of geographical and personal contiguity or contact. In a passage which reminds one of Heidegger's musings,[39] Sapir welcomes the creation of "new worlds," of sociological, cultural or technological texture (p. 80). These new worlds correlate with new (sub)groups in society (p. 79).

The article "Dialect," written at a time when dialect studies were flourishing,[40] hardly goes into typically dialectological issues. Sapir discusses "dialect" from the point of view of the theoretical linguist and sociologist. From the linguistic point of view dialects are languages, both historically[41] and systemically. Integrating the sociological point of view, one can define dialects as the socialized form of the tendency towards variation in languages.[42] This is a universal phenomenon, which has both inherent causes (such as "drift") and extrinsic ones (such as mixture of groups). Sapir mentions the popular conception of "dialect" as being a deviation

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[37] See also *Language*, *o.c.*, p. 22 and pp. 233–234.

[38] The term is used to refer to the general modulation of the voice, not to intonational patterns (which belong to language).

[39] See Martin Heidegger, *Holzwege* (Frankfurt, 1950), especially the essay "Die Zeit des Weltbildes" (text of a conference of 1938).

[40] For a survey of the Romance field, see Piet Desmet – Peter Lauwers – Pierre Swiggers, "Dialectology, Philology, and Linguistics in the Romance Field: Methodological Developments and Interactions", *Belgian Journal of Linguistics* 13 (1999), 177–203.

[41] See Antoine Meillet, *Les dialectes indo-européens* (Paris, 1908).

[42] See *Language*, *o.c.*, pp. 158–163.

or corruption: such a view ignores the fact that standard languages are nothing but the elaborated form of a dialect that has won out[43] (pp. 123-124). Dialects often have an ancestry which is at least equal to that of the standard language (in which case one can call them "co-dialects"). Some dialects, however, are later developments of a standardized language (such "post-dialects" are the result of either language exportation or regional diversification).

Surveying the contemporary situation of dialects Sapir notes their persistence in some areas of Europe (like Italy), and singles out their socially symbolizing function. Dialectalization (or regionalization) has political, cultural[44] and ideological reasons. Sapir's text reflects the then recent rise of "new nationalisms,"[45] but he seems to underestimate their importance in comparison with the pressure of the modern "realistic and pragmatic" mind (p. 125), favouring unification and normativism. As noted by Sapir, some institutions (education, army, etc.) contribute to the process of unification.

The article ends with a remark on secondary symbolization, i.e. the sublimated cult of a dialect as a symbol of the local group (which thus inverts its inferiority status) and with a note on the (emotional) ties of the individual to his "dialectic habits of speech" (p. 126).

The paper on the psychological reality of phonemes was published in French under the title "La réalité psychologique des phonèmes", but first written in English by Sapir. A carbon copy,[46] corrected by Sapir, of the English source text has been preserved. The English version published in 1949[47] is slightly different from the corrected carbon copy, and seems to be based on another (uncorrected) copy, collated with the published French text.[48] None of the divergences between the versions is of major importance for the content.[49]

This classic paper[50] deals in fact with the psychological reality of morphophonemes rather than phonemes: the first two examples concern morphophonemic

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[43] For a nice example, see R. Anthony Lodge, *French, from Dialect to Standard* (London, 1993). On the process of standardization in Europe, see John E. Joseph, *Eloquence and Power: the Rise of Language Standards and Standard Languages* (London/New York, 1987).

[44] As an example Sapir mentions the influence of Romanticism (p. 125).

[45] These were reported upon by A. Meillet and L. Tesnière in the works referred to in note 35.

[46] The original copy has not been preserved.

[47] Published under the title "The Psychological Reality of Phonemes" in *Edward Sapir: Selected Writings in Language, Culture, and Personality* (ed. D.G. Mandelbaum, Berkeley, 1949), pp. 46–60. This version was reprinted in Valerie Becker Makkai ed., *Phonological Theory: Evolution and Current Practice* (New York, 1972), pp. 22-31.

[48] An offprint of the French text with Sapir's corrections has also been preserved. See the "Corrections to the French version published in 1933."

[49] Both the published French and English versions are reprinted here: both deserve their place in *The Collected Works of Edward Sapir*, especially because the two papers had a different reception history and have thus found their place within different research traditions.

[50] On the adumbration of its contents in the correspondence with Alfred L. Kroeber, see Victor Golla, *The Sapir – Kroeber Correspondence. Letters between Edward Sapir and A.L. Kroeber 1905–1925* (Berkeley, 1984), letter

alternations, the fourth one involves an argument based on morphophonemics, and the fifth example is a case of subphonemic "projection;" only the third example exemplifies the psychological conscience of "phonemes." However, Sapir did not have at his disposal the notion of morphophoneme (in fact, the term *phoneme* was at that time still relatively new to him). The basic idea of the paper is that native speakers "perceive" the organization (or categorization, or calibration) of their language not in direct relation to the (material) phonetic data, but with respect to the (underlying) functional structures (and processes affecting them). The judgement of native speakers betrays a "phonemic" (morphophonemic) intuition, and reveals their grasp of the "dynamic reality" of language. The key concept in this paper is that of functional *pattern* (a term translated as "*forme*" in French), which is the basis for the psychological understanding the native speaker has of his language.

Sapir discusses five examples drawn from his fieldwork[53] and his teaching, all showing the difference between "objective facts" and "subjective categorization":[54]

(1) an example from Southern Paiute, fully analysed in his grammar of Southern Paiute,[55] which involves the treatment of non-initial consonants in postvocalic contexts with morphophonemic conditioning;[56]

140, p. 139 (correspondence of 28th May 1914, letter by Sapir), letters 152 and 153, pp. 158–160 (correspondence of late October 1914, letters by Kroeber), letter 208, pp. 220–222 (correspondence of 8th September 1916, letter by Sapir); see also Sapir's *Language* (New York, 1921), p. 58 n. 16: "The conception of the ideal phonetic system, the phonetic pattern, of a language is not as well understood by linguistic students as it should be. In this respect the unschooled recorder of language, provided he has a good ear and a genuine instinct for language, is often at a great advantage as compared with the minute phonetician, who is apt to be swamped by his mass of observations. I have already employed my experience in teaching Indians to write their own languages for its testing value in another connection. It yields equally valuable evidence here. I found that it was difficult or impossible to teach an Indian to make phonetic distinctions that did not correspond to "points in the pattern of his language," however these differences might strike our objective ear, but that subtle, barely audible, phonetic differences, if only they hit the "points in the pattern," were easily and voluntarily expressed in writing. In watching my Nootka interpreter write his language, I often had the curious feeling that he was transcribing an ideal flow of phonetic elements which he heard, inadequately from a purely objective standpoint, as the interpretation of the actual rumble of speech."

[51] In his *Language* (New York, 1921), Sapir did not use the term phoneme, the distinction *sound/phoneme* is however implicitly made. The first theoretical discussion, within American structuralist linguistics, of the phoneme is William F. Twaddell, *On Defining the Phoneme* (Baltimore, 1935).

[52] As shown by Sapir at the beginning of his paper, these functional structures are "vitally" important.

[53] For a survey of Sapir's field work (languages, dates, locations and informations), see *The Collected Works of Edward Sapir*, vol. IV, pp. 255–257.

[54] As noted by Sapir, the latter can be influenced by "etymology" (i.e. insight into the history of the language).

[55] See E. Sapir, *The Southern Paiute Language* (3 parts), 1930–1931 [reprinted in *The Collected Works of Edward Sapir*, vol. X]; see part I, pp. 45–70. The informant Sapir refers to is Tony Tillohash (a Kaibab Paiute), who worked during four months in 1910 with Sapir in Philadelphia (in 1909 Sapir had worked with the Uncompahgre and Uintah Utes); see Catherine S. Fowler – Don D. Fowler, "Edward Sapir, Tony Tillohash and Southern Paiute Studies", in *New Perspectives in Language, Culture and Personality. Proceedings of the Edward Sapir Centenary Conference (Ottawa, 1–3 Oct. 1984)*, edited by William Cowan, Michael K. Foster and Konrad Koerner (Amsterdam/Philadelphia, 1986), pp. 41–65.

[56] Sapir draws a parallel with morphophonemic processes in Old Irish (spirantization, nasalization, ...).

(2) an example from Sarcee, involving a case of homophony (or merger) of two stems (one of them to be described as ending in morphophonemic °T', of which the dental consonantal element can be omitted in certain contexts; Sapir speaks here of "consonantal latency");
(3) & (4) are two examples from Nootka, based on Sapir's fieldwork with Alex Thomas. The first example concerns cases of phonemic discrimination as opposed to phonetic reality; the second example concerns the (phonemic) homogeneous treatment of postglottalization (of stops and affricates) and preglottalization (of nasals and semivowels) by the informant. Sapir provides three reasons for such a phonemic homogenization, the first and second referring to phonotactic conditions, while the third involves morphophonemic considerations.
(5) the last example concerns a case of "projection" of subphonemic distinctions from one's mother language to another language (with a different patterning). Here the "psychological reality" becomes an instance of "illusion" (and inaccurate notation).

In "The Relation of American Indian Linguistics to General Linguistics"[57] Sapir wants to give an "object lesson in linguistic methodology" (p. 3).[58] The experience acquired in Americanist work is used as a corrective against general conclusions often drawn on the basis of data limited to Indo-European and Semitic.[59] At the same time, the paper can be read as a tribute to Boas, who had warned his young student Sapir against hasty generalizations, and had categorically rejected equations too easily posited between language, race, and culture. In the present paper Sapir seems inclined to give more weight to the "diffusionist" view (held by Boas) than he does in his *Language*[60] or in his reconstructivist work on American Indian languages, but this may be explained by his primary concern of correcting some preconceived ideas of linguists working exclusively within one linguistic family (Indo-European or Semitic).

This short paper is structured as follows. First, Sapir shows the methodological value of American Indian languages for general linguistics, with examples taken from the domains of phonology and morphology. For phonology, the American Indian languages are referred to in order to show that the distribution of phonetic elements is not necessarily tied up with genetic affiliation; the languages of

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[57] The text must have been written after 1933 (reference is made to Leonard Bloomfield's *Language*, published in 1933), but probably not much later.

[58] Sapir also speaks of an "object lesson" for a "general theory of historical phonetics" (p. 2), of correcting "possible misconceptions" (p. 3), and ends his paper with a general word of caution: "These are but a few out of hundreds of examples of what may be learned from American Indian languages of basic linguistic concepts, or rather of the grammatical treatment of basic concepts. There is hardly a classificatory peculiarity which does not receive a wealth of illumination from American Indian languages. It is safe to say that no sound general treatment of language is possible without constant recourse to these materials" (p. 4).

[59] Sapir also uses the term "Hamitic-Semitic" (p. 2, p. 4); see also the introduction to section III.

[60] See *Language* (New York, 1921), pp. 219–220.

the North-West Coast testify to the areal spread of features transcending and disrupting genetic ties.[61] A similar example is given for morphology: here Sapir uses examples from Hokan and Athabaskan to show that morphological "re-formations" can occur owing to contact, but that there are also languages which are extremely conservative and resistent to foreign intrusions.

After the section on the "corrective methodological value," Sapir proceeds to demonstrate the importance of the intrinsic analysis of American Indian languages, which display a great variety of types.[62] Here again, the paper turns into a lesson of methodology: given the high degree of morphological divergence within a "relatively homogeneous race," the American Indian languages are a clear illustration of the non-congruence of language, race and culture.[63] "This means that American Indian linguistics stands as a silent refutation of those who try to establish an innate psychological rapport between cultural and linguistic forms" (p. 3).[64]

Serving as a "test field" for "solid linguistic thinking," the data observed in American Indian languages should prevent the linguist from unjustified generalizations or universalizations, or other unwarranted statements (e.g., concerning the world-wide attestation of nominal classifications, of specific grammatical categories or historical processes). What Sapir wants to make clear here is that the study of how "basic concepts" are grammatic(al)ized (i.e. integrated in the formal system of grammar) should be based on an extensive (typological) inspection of the world's languages.

The paper ends with remarks on the practical (and personal) value of field work: Sapir insists on the indispensable experience of familiarizing oneself, inductively (p. 4), with native languages. American Indian languages can thus fulfil the role of an eye-opener and may help the linguist in getting "a thoroughly realistic idea of what language is" (p. 4).

Pierre Swiggers

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[61] See also *Language*, *o.c.*, pp. 211–213.

[62] See also E. Sapir – Morris Swadesh, "American Indian Grammatical Categories", *Word* 2 (1946), 103–112 [reprinted in *The Collected Works of Edward Sapir*, vol. V, pp. 133–142; this paper was begun by Sapir around 1929].

[63] This is also the bottom line of chapter 10 of Sapir's *Language* (New York, 1921); this chapter was reprinted in Victor Francis Calverton ed., *The Making of Man* (New York, 1931), pp. 142–156.

[64] Sapir uses examples taken from the North-West Coast, from the Plains culture and the Pueblo culture. In his *Language*, *o.c.*, pp. 228–229, he had given examples taken from Californian tribes, and from the different cultures to which speakers of Athabaskan languages belong.

ANALYSIS 21

THE CONCEPT OF PHONETIC LAW AS TESTED IN PRIMITIVE LANGUAGES BY LEONARD BLOOMFIELD[1]

By EDWARD SAPIR[2]
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A large part of the scientific study of language consists in the formulation and application of phonetic laws. These phonetic laws are by no means comparable to the laws of physics or chemistry or any other of the natural sciences. They are merely general statements of series of changes characteristic of a given language at a particular time. Thus, a phonetic law applying to a particular sound in the history of English applies only to that sound within a given period of time and by no means commits itself to the development of the same sound at another period in the history of English, nor has it anything to say about the treatment of the same sound in other languages. Experience has shown that the sound system of any language tends to vary slightly from time to time. These shifts in pronunciation, however, have been found to work according to regular laws or formulas. Thus, the *f* of the English word *father* can be shown by comparison with such related languages as Latin, Greek, and Sanskrit to go back to an original *p*. The change of *p* in the original Indo-European word for "father," reflected in the Latin *pater* and the Greek *patēr*, is not, however, an isolated phenomenon but is paralleled by a great many other examples of the same process. Thus, *foot* corresponds to Greek *pous*, genitive *podos; five* corresponds to Greek *pente; full* corresponds to Latin *plēnus;* and *for* is closely related to Latin *prō*. A comparison of English with certain other languages, such as German, Swedish, Danish, Old Icelandic, and Gothic, proves that these languages share with English the use of the consonant *f* where other languages of the same family which are less closely related to English than these have a *p*.

Inasmuch as such languages as Latin, Greek, Sanskrit, and Slavic differ

[1] "A Set of Postulates for the Science of Language," *Language: Journal of the Linguistic Society of America*, II (1926), 153–64; "On the Sound-System of Central Algonquian," *ibid.*, I (1925), 130–56; "A Note on Sound-Change," *ibid.*, IV (1928), 99–100; also E. Sapir, MS materials on Athabaskan languages.

[2] [In preparing this analysis, Professor Sapir was invited to discuss his own work at length because of its similarity to the work of Bloomfield.—Editor.]

among themselves about as much as any one of them differs from the Germanic group to which English belongs, it is a fair assumption that their concordance is an archaic feature and not a parallel development, and that the *f* of English and its more closely related languages is a secondary sound derived from an original *p*. This inference is put in the form of a phonetic law, which reads: "Indo-European *p* becomes Germanic *f*." The change cannot be dated, but obviously belongs to at least the period immediately preceding the earliest contact of the Germanic tribes with the Romans, for in all the Germanic words and names that have come down to us from the classic authors this change is already manifest. It is important to realize that two distinct historic facts may be inferred from such evidence as we have given, which is naturally but a small part of the total evidence available. In the first place, the change of *p* to *f* is regular. In other words, we do not find that in one correspondence *f* is related to *p* while in another correspondence *f* seems to parallel *w* or *b* or some other sound. In the second place, the general consensus of the Indo-European languages indicates that the change has been from *p* to *f* and not from *f* to *p*. Incidentally, this is in accord with general linguistic experience, for stopped consonants more often become spirants (continuous "rubbed" consonants) than the reverse.

Such phonetic laws have been worked out in great number for many Indo-European and Semitic languages. There are obviously many other historical factors that contribute their share to the phenomena of change in language, but phonetic law is justly considered by the linguist by far the most important single factor that he has to deal with. Inasmuch as all sound change in language tends to be regular, the linguist is not satisfied with random resemblances in languages that are suspected of being related but insists on working out as best he can the phonetic formulas which tie up related words. Until such formulas are discovered, there may be some evidence for considering distinct languages related—for example, the general form of their grammar may seem to provide such evidence—but the final demonstration can never be said to be given until comparable words can be shown to be but reflexes of one and the same prototype by the operation of dialectic phonetic laws.

Is there any reason to believe that the process of regular phonetic change is any less applicable to the languages of primitive peoples than to the languages of the more civilized nations? This question must be answered in the negative. Rapidly accumulating evidence shows that this process is just as easily and abundantly illustrated in the languages of the American Indian or of the Negro tribes as in Latin or Greek or

English. If these laws are more difficult to discover in primitive languages, this is not due to any special characteristic which these languages possess but merely to the inadequate technique of some who have tried to study them.

An excellent test case of phonetic law in a group of primitive languages is afforded by the Algonkian linguistic stock of North America. This stock includes a large number of distinct languages which are, however, obviously related in both grammar and vocabulary. Bloomfield has taken four of the more important of the languages that belong to the central division of the stock and has worked out a complete system of vocalic and consonantal phonetic laws. We have selected in Table I five of these phonetic laws in order to give an idea of the nature of the correspondences.

TABLE I

PCA	Fox	Ojibwa	Plains Cree	Menomini
1. tck	hk	ck	sk	tsk
2. ck	˚ck	ck	sk	sk
3. xk	hk	hk	sk	hk
4. hk	hk	hk	hk	hk
5. nk	g	ng	hk	hk

Table I shows how five different consonantal combinations in which the second element is *k* were respectively developed in Fox, Ojibwa, Plains Cree, and Menomini. The Primitive Central Algonkian prototype (PCA) is, of course, a theoretical reconstruction on the basis of the actual dialectic forms.

Observe that this table does not say that a particular *k* combination of one dialect corresponds uniquely to a particular *k* combination of another dialect, but merely that certain definite dialectic correspondences are found which lead to such reconstructive inferences as are symbolized in the first column of the table. Thus, the Plains Cree *sk* does not always correspond to the Fox *hk* but may just as well correspond to the Fox *ck*.[3] The Cree *sk* that corresponds to the Fox *hk*, however, is obviously not the same original sound as the Cree *sk* which corresponds to the Fox *ck*, as is indicated by the fact that in Menomini the former corresponds partly to *tsk*, partly to *hk*, while the latter regularly corresponds to *sk*. None of the four dialects exactly reflects the old phonetic pattern, which must be constructed from series of dialectic correspondences.

[3] *C* indicates the sound of *sh* in *ship*; *tc* indicates the sound of *ch* in *chip*; *x* indicates the sound of German *ch* in *ach*.

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The methodology of this table is precisely the same as the methodology which is used in Indo-European linguistics. The modern German *ei* of *mein* corresponds to the diphthong *i* of English *mine*, but it does not follow that every modern German *ei* corresponds to the English diphthong. As a matter of fact, a large number of German words with *ei* have English correspondents in *o*, as in *home*. Thus, while *mine* corresponds to German *mein*, *thine* to German *dein*, and *wine* to German *Wein*, the English *home* corresponds to German *Heim*, *soap* to German *Seife*, and

TABLE II

PCA	Fox	Ojibwa	Plains Cree	Menomini
1. **-alakatckw-* . "palate"	.....	*-inagacku-*	*-ayakask*	*-inākatsku-*
**ketckyāwa* .. "he is old"	*kehkyāwa*	.....	.....	*kotskīw*
2. **ickutāwi* ... "fire"	*ackutāwi*	*ickudā*	*iskutāw*	*iskōtāw*
3. **maxkesini* ... "moccasin"	*mahkasāhi* (dim. form)	*mahkizin*	*maskisin*	*mahkāsin*
4. **nōhkuma* ...	*nohkuma* "my mother-in-law"	*nōhkumis*	*nōhkum*	*nōhkumeh*
**nohkumehsa* "my grandmother"	*nohkumesa* "my grandmother"			
5. **tankeckawāwa* "he kicks him"	*tageckawāwa*	*tangickawād*	*tahkiskawāw*	*tahkāskawew*

loaf (of bread) to German *Laib*. We have to conclude that the modern German *ei* represents two historically distinct sounds. In this particular case we have the documentary evidence with which to check up a necessary or, at least, a highly plausible inference. The type illustrated by English *mine* :: German *mein* corresponds to Old High German *ī* and Anglo-Saxon *ī*, while the type illustrated by English *home* :: German *Heim* corresponds to Old High German *ei* and Anglo-Saxon *ā*. We can briefly summarize all the relevant facts by saying that Early Germanic *ī* has become a diphthong in Modern English and a practically identical diphthong in modern German, while an Early Germanic sound which we may reconstruct as *ai* (cf. Gothic *ai* in such words as *haims*, "home")

has developed to *ā* in Anglo-Saxon, whence modern English *ō*, and *ei* in Old High German, whence the diphthong in modern German. The important thing to observe about the English and the German examples is that even in the absence of historical evidence it would have been possible

TABLE III

PCA	Fox	Ojibwa	Plains Cree	Menomini
1. tcp	?	hp	?	tsp
2. cp	hp	cp	sp	sp
3. xp	hp	hp	sp	hp
4. hp	hp	hp	hp	hp
5. mp	p	mb	hp	hp

to infer the existence in Early Germanic of two distinct sounds from the nature of the correspondences in English and German.

Table II gives examples of actual words illustrating the five phonetic laws in question. The examples given are not isolated examples but are,

TABLE IV

PCA	Fox	Ojibwa	Plains Cree	Menomini
5. **meçkusiwa* . "he is red"	*meckusiwa*	*mickuzi*	*mihkusiw*	*(mehkōn)*

for the most part, representative of whole classes. The true generality of the phonetic laws illustrated in Table I goes even farther than there indicated, as is shown by the set of correspondences in Table III.

TABLE V

PCA	Fox	Ojibwa	Plains Cree	Menomini
6. çk	ck	ck	hk	hk

It will be observed that in this table *p* takes the place, for the most part, of *k* of Table II.

Bloomfield found, however, that there was one Algonkian stem evidently involving a *k* combination which did not correspond to any of the five series given above. This is the stem for "red" illustrated in Table IV.

For this series of correspondences Bloomfield has constructed a sixth phonetic law, which is expressed in Table V. It should be understood that the symbol ç is not a phonetic symbol in the ordinary sense of the

word. It is merely a formula or tag which is intended to hold down a place, as it were, in a pattern. It may represent a sound similar to the *ch* of the German *ich*, or it may represent some other sound or combination of sounds. Its chief purpose is to warn us that the *ck* or *hk* of the Central Algonkian dialects is not to be historically equated with other examples of *ck* or *hk* in these dialects.

The justification for setting up a special phonetic law on the basis of one set of correspondences is given by Bloomfield himself. He says, "Since there appeared to be no point of contact for analogic substitution of *hk* for *ck*, or vice versa, in any of the languages, and since borrowing of the stem for *red* seemed unlikely, it was necessary to suppose that the parent speech had in this stem for *red* a different phonetic unit."

Sometimes one is in a position to check up a phonetic reconstruction such as is implied in the use of the symbol *çk*. A related dialect may turn up in which the theoretical phonetic prototype is represented by a distinctive sound or sound combination. As a matter of fact, exactly this proved to be the case for Central Algonkian. Some time after Bloomfield set up the sixth phonetic law, he had the opportunity to study the Swampy Cree dialect of Manitoba. Interestingly enough, this Cree dialect had the consonant combination *htk* in forms based on the stem for "red," e.g., *mihtkusiw*, "he is red"; and in no other stem did this combination of sounds occur. In other words, the added evidence obtained from this dialect entirely justified the isolation for Primitive Central Algonkian of a particular phonetic-sound group, symbolized by *çk*. The setting-up of phonetic law No. 6 was, by implication, a theoretically possible prediction of a distinct and discoverable phonetic pattern. The prediction was based essentially on the assumption of the regularity of sound changes in language.

Bloomfield's experience with the Central Algonkian dialects is entirely parallel to my own with the Athabaskan languages. These constitute an important linguistic stock which is irregularly distributed in North America. The northern group occupies a vast territory stretching all the way from near the west coast of Hudson Bay west into the interior of Alaska. To it belong such languages as Anvik (in Alaska), Carrier (in British Columbia), Chipewyan, Hare, Loucheux, Kutchin, Beaver, and Sarcee. We shall take Chipewyan and Sarcee as representatives of this group. The geographically isolated Pacific division of Athabaskan consists of a number of languages in southwestern Oregon and northwestern California. We shall take Hupa as representative. The southern division of Athabaskan is in New Mexico and Arizona and adjoining regions, and

is represented by Navaho, Apache, and Lipan. We shall take Navaho as representative of the group. In spite of the tremendous geographical distances that separate the Athabaskan languages from each other, it is perfectly possible to set up definite phonetic laws which connect them according to consistent phonetic patterns. Navaho, Hupa, and Chipewyan are spoken by Indians who belong to entirely distinct culture horizons, yet the languages themselves are as easily derivable from a common source on the basis of regular phonetic law as are German, Dutch, and Swedish.

TABLE VI

Ath.	Hupa	Chipewyan	Navaho	Sarcee
I. 1. s	s	θ	s	s
2. z	s	ð	z	z
3. dz	dz	dð	dz	dz
4. ts	ts	tθ	ts	ts
5. ts	ts'	tθ'	ts'	ts'
II. 1. c	W	s	c	s
2. j	W	z	j	z
3. dj	dj	dz	dj	dz
4. tc	tcw	ts	tc	ts
5. tc'	tc'	ts'	tc'	ts'
III. 1. x	W	c	s	c
2. y	y	y	y	y
3. gy	gy	dj	dz	dj
4. ky	ky	tc	ts	tc
5. ky'	ky'	tc'	ts'	tc'

Table VI shows the distribution in Hupa, Chipewyan, Navaho, and Sarcee of three initial consonantal sets, each of which consists of five consonants. In other words, the table summarizes the developments of fifteen originally distinct Athabaskan initial consonants in four selected dialects. Each of the entries must be considered as a summary statement applying to a whole class of examples.[4]

The table merits study because of its many implications. It will be observed that no one dialect exactly reproduces the reconstructed Athabaskan forms given in the first column. Series I is preserved intact in Navaho and Sarcee and very nearly so in Hupa, but has been shifted to

[4] The apostrophe symbolizes a peculiar type of consonantal articulation, characterized by simultaneous closure of the glottis and point of contact in the mouth, with glottal release preceding oral release. *J* is the French *j* of *jour*; *dj* is the *j* of English *just*; *x* is the *ch* of German *ich*; *W* is approximately the *wh* of English *what*; θ is the *th* of English *thick*; ð is the *th* of English *then*.

another series in Chipewyan. Series II is preserved intact in Navaho, but has been shifted in Sarcee to identity with the series that corresponds to original I, while Hupa has introduced several peculiar dialectic developments and Chipewyan has shifted it to the original form of I. Series III is nowhere kept entirely intact but nearly so in Hupa, while in Chipewyan and in Sarcee it has moved to the original form of Series II, in Navaho to a form which is identical with the original and the Navaho form of Series I. It is clear from the table that a Sarcee *s* is ambiguous as to origin, for it may go back either to Athabaskan *s* or Athabaskan *c*. On the other hand, a Sarcee *s* which is supported by either Navaho or Hupa *s* must be the representative of an original Athabaskan *s*. Sarcee *tc* is, in the main, unambiguous as to origin, for it corresponds to the original Athabaskan *ky*. It is curious and instructive to note that, of the four

TABLE VII

Ath.	Hupa	Chipewyan†	Navaho†	Sarcee†
**kyan* ..... "rain"	.....	*tcą*	*n-ł-tsą* "there's a rainfall"	*tcą*

† ą represents nasalized *a*, as in French *an*. Sarcee ą is a peculiar *a* with velar resonance, regularly developed from Athabaskan *a*.

languages given in the table, Hupa and Chipewyan are the two that most nearly correspond as to *pattern* but never as to actual *sound* except in the one instance of *y* (III, 2).

Let us take a practical example of prediction on the basis of the table. If we have a Sarcee form with *tc*, a corresponding Navaho form with *ts*, and a Chipewyan form with *tc*, what ought to be the Hupa correspondent? According to the table it ought to be *ky*.

Table VII shows the distribution in three dialects of the Athabaskan sound *ky* (III, 4) in the word for "rain." When I first constructed the Athabaskan prototype, I assumed an initial *ky*, in spite of the absence of the test form in Hupa, on the basis of the dialectic correspondences. Neither an original *ts* nor *tc* could be assumed in spite of the fact that these sounds were actually illustrated in known dialects, whereas *ky* was not. The Hupa column had to remain empty because the cognate word, if still preserved, was not available in the material that had been recorded by P. E. Goddard.

In the summer of 1927, however, I carried on independent researches on Hupa and secured the form *kyaŋ-kyoh*,[5] meaning "hailstorm." The sec-

[5] *ŋ* is the *ng* of English *sing*.

ond element of the compound means "big" and the first is obviously the missing Hupa term corresponding to the old Athabaskan word for "rain." In other words, an old compound meaning "rain-big" has taken on the special meaning of "hailstorm" in Hupa. The Hupa form of the old word for "rain" is exactly what it should be according to the correspondences that had been worked out, and the reconstruction of the primitive Athabaskan form on the basis of the existing forms was therefore justified by the event.

Table VIII gives the chief dialectic forms that were available for the reconstruction of the Athabaskan word for "rain." Observe that not one of these has the original sound *ky* which must be assumed as the initial of the word. This is due to the fact that the old Athabaskan *ky* and related sounds shifted in most dialects to sibilants but were preserved in

TABLE VIII

DIALECTIC FORMS FOR "RAIN"

Anvik (Alaska)	*tcɔN**
Carrier (B.C.)	*tcan*
Chipewyan	*tcą*
Hare	*tcǫ*
Loucheux	*tcien*
Kutchin	*tscin*
Beaver	*tcǫ*
Sarcee	*tca*
Navaho	*n-ł-tsą*

* ɔ represents open *o*, as in German *voll*; ǫ is nasalized *o*. *N* is voiceless *n*.

Hupa and a small number of other dialects, some of which are spoken at a great remove from Hupa. In other words, in working out linguistic reconstructions we must be guided not merely by the overt statistical evidence but by the way in which the available material is patterned.

For those interested in a summary statement of the concepts and assumptions involved in the foregoing, the following quotations from Bloomfield's "A Set of Postulates for the Science of Language " may prove of interest:

Def.—A minimum same of vocal feature is a *phoneme* or *distinctive sound*.

Assumption.—The number of different phonemes in a language is a small sub-multiple of the number of forms.

Assumption.—Every form is made up wholly of phonemes. . . . . Such a thing as a "small difference of sound" does not exist in a language.

Assumption.—The number of orders of phonemes in the morphemes (i.e., "minimum forms") and words of a language is a sub-multiple of the number of possible orders.

Assumption.—Every language changes at a rate which leaves contemporary persons free to communicate without disturbance.

Assumption.—Among persons, linguistic change is uniform in ratio with the amount of communication between them.

Assumption.—Phonemes or classes of phonemes may gradually change.

Def.—Such change is *sound-change.*

Assumption.—Sound-change may affect phonemes or classes of phonemes in the environment of certain other phonemes or classes of phonemes.

Def.—This change is *conditioned sound-change.*

At the end of "A Note on Sound-Change," in which the Swampy Cree forms in *htk* are discussed, Bloomfield remarks:

> The postulate of sound-change without exceptions will probably always remain a mere assumption, since the other types of linguistic change (analogic change, borrowing) are bound to affect all our data. As an assumption, however, this postulate yields, as a matter of mere routine, predictions which otherwise would be impossible. In other words, the statement that *phonemes change* (sound-changes have no exceptions) is a tested hypothesis: in so far as one may speak of such a thing, it is a proved truth.

It may be pointed out in conclusion that the value to social science of such comparative study of languages as is illustrated in the present paper is that it emphasizes the extraordinary persistence in certain cases of complex *patterns* of cultural behavior regardless of the extreme variability of the content of such patterns. It is in virtue of pattern conservatism that it is often possible to foretell the exact form of a specific cultural phenomenon.[6]

[6] [This analysis was first written in December, 1928, and revised by the analyst in February, 1929.—EDITOR.]

Editorial Note

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COMMUNICATION. It is obvious that for the building up of society, its units and subdivisions, and the understandings which prevail between its members some processes of communication are needed. While we often speak of society as though it were a static structure defined by tradition, it is, in the more intimate sense, nothing of the kind, but a highly intricate network of partial or complete understandings between the members of organizational units of every degree of size and complexity, ranging from a pair of lovers or a family to a league of nations or that ever increasing portion of humanity which can be reached by the press through all its transnational ramifications. It is only apparently a static sum of social institutions; actually it is being reanimated or creatively reaffirmed from day to day by particular acts of a communicative nature which obtain among individuals participating in it. Thus the Republican party cannot be said to exist as such, but only to the extent that its tradition is being constantly added to and upheld by such simple acts of communication as that John Doe votes the Republican ticket, thereby communicating a certain kind of message, or that a half dozen individuals meet at a certain time and place, formally or informally, in order to communicate ideas to one another and eventually to decide what points of national interest, real or supposed, are to be allowed to come up many months later for discussion in a gathering of members of the party. The Republican party as a historic entity is merely abstracted from thousands upon thousands of such single acts of communication, which have in common certain persistent features of reference. If we extend this example into every conceivable field in which communication has a place we soon realize that every cultural pattern and every single act of social behavior involve communication in either an explicit or an implicit sense.

One may conveniently distinguish between certain fundamental techniques, or primary processes, which are communicative in character and certain secondary techniques which facilitate the process of communication. The distinction is perhaps of no great psychological importance but has a very real historical and sociological significance, inasmuch as the fundamental processes are common to all mankind, while the secondary techniques emerge only at relatively sophisticated levels of civilization. Among the primary communicative processes of society may be mentioned: language; gesture, in its widest sense; the imitation of overt behavior; and a large and ill defined group of implicit processes which grow out of overt behavior and which may be rather vaguely referred to as "social suggestion."

Language is the most explicit type of communicative behavior that we know of. It need not here be defined beyond pointing out that it consists in every case known to us of an absolutely complete referential apparatus of phonetic symbols which have the property of locating every known social referent, including all the recognized data of perception which the society that it serves carries in its tradition. Language is the communicative process par excellence in every known society, and it is exceedingly important to observe that whatever may be the shortcomings of a primitive society judged from the vantage point of civilization its language inevitably forms as sure, complete and potentially creative an apparatus of referential symbolism as the most sophisticated language that we know of. What this means for a theory of communication is that the mechanics of significant understanding between human beings are as sure and complex and rich in overtones in one society as in another, primitive or sophisticated.

Gesture includes much more than the manipulation of the hands and other visible and movable parts of the organism. Intonations of the voice may register attitudes and feelings quite as significantly as the clenched fist, the wave of the hand, the shrugging of the shoulders or the lifting of the eyebrows. The field of gesture interplays constantly with that of language proper, but there are many facts of a psychological and historical order which show that there are subtle

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yet firm lines of demarcation between them. Thus, to give but one example, the consistent message delivered by language symbolism in the narrow sense, whether by speech or by writing, may flatly contradict the message communicated by the synchronous system of gestures, consisting of movements of the hands and head, intonations of the voice and breathing symbolisms. The former system may be entirely conscious, the latter entirely unconscious. Linguistic, as opposed to gesture, communication tends to be the official and socially accredited one; hence one may intuitively interpret the relatively unconscious symbolisms of gesture as psychologically more significant in a given context than the words actually used. In such cases as these we have a conflict between explicit and implicit communications in the growth of the individual's social experience.

The primary condition for the consolidation of society is the imitation of overt behavior. Such imitation, while not communicative in intent, has always the retroactive value of a communication, for in the process of falling in with the ways of society one in effect acquiesces in the meanings that inhere in these ways. When one learns to go to church, for instance, because other members of the community set the pace for this kind of activity, it is as though a communication had been received and acted upon. It is the function of language to articulate and rationalize the full content of these informal communications in the growth of the individual's social experience.

Even less directly communicative in character than overt behavior and its imitation is "social suggestion" as the sum total of new acts and new meanings that are implicitly made possible by these types of social behavior. Thus, the particular method of revolting against the habit of church going in a given society, while contradictory, on the surface, of the conventional meanings of that society, may nevertheless receive all its social significance from hundreds of existing prior communications that belong to the culture of the group as a whole. The importance of the unformulated and unverbalized communications of society is so great that one who is not intuitively familiar with them is likely to be baffled by the significance of certain kinds of behavior, even if he is thoroughly aware of their external forms and of the verbal symbols that accompany them. It is largely the function of the artist to make articulate these more subtle intentions of society.

Communicative processes do not merely apply to society as such, they are indefinitely varied as to form and meaning for the various types of personal relationships into which society resolves itself. Thus, a fixed type of conduct or a linguistic symbol has not by any means necessarily the same communicative significance within the confines of the family, among the members of an economic group and in the nation at large. Generally speaking, the smaller the circle and the more complex the understandings already arrived at within it, the more economical can the act of communication afford to become. A single word passed between members of an intimate group, in spite of its apparent vagueness and ambiguity, may constitute a far more precise communication than volumes of carefully prepared correspondence interchanged between two governments.

There seem to be three main classes of techniques which have for their object the facilitation of the primary communicative processes of society. These may be referred to as: language transfers; symbolisms arising from special technical situations; and the creation of physical conditions favorable for the communicative act. Of language transfers the best known example is writing. The Morse telegraph code is another example. These and many other communicative techniques have this in common, that while they are overtly not at all like one another their organization is based on the primary symbolic organization which has arisen in the domain of speech. Psychologically, therefore, they extend the communicative character of speech to situations in which for one reason or another speech is not possible.

In the more special class of communicative symbolism one cannot make a word to word translation, as it were, back to speech but can only paraphrase in speech the intent of the communication. Here belong such symbolic systems as wigwagging, the use of railroad lights, bugle calls in the army and smoke signals. It is interesting to observe that while they are late in developing in the history of society they are very much less complex in structure than language itself. They are of value partly in helping out a situation where neither language nor any form of language transfer can be applied, partly where it is desired to encourage the automatic nature of the desired response. Thus, because language is extraordinarily rich in meaning it sometimes becomes a little annoying or even dangerous to rely upon it where only a

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simple this or that, or yes or no, is expected to be the response.

The importance of extending the physical conditions allowing for communication is obvious. The railroad, the telegraph, the telephone, the radio and the airplane are among the best examples. It is to be noted that such instruments as the railroad and the radio are not communicative in character as such; they become so only because they facilitate the presentation of types of stimuli which act as symbols of communication or which contain implications of communicative significance. Thus, a telephone is of no use unless the party at the other end understands the language of the person calling up. Again, the fact that a railroad runs me to a certain point is of no real communicative importance unless there are fixed bonds of interest which connect me with the inhabitants of the place. The failure to bear in mind these obvious points has tended to make some writers exaggerate the importance of the spread in modern times of such inventions as the railroad and the telephone.

The history of civilization has been marked by a progressive increase in the radius of communication. In a typically primitive society communication is reserved for the members of the tribe and at best a small number of surrounding tribes with whom relations are intermittent rather than continuous and who act as a kind of buffer between the significant psychological world—the world of one's own tribal culture—and the great unknown or unreal that lies beyond. Today, in our own civilization, the appearance of a new fashion in Paris is linked by a series of rapid and necessary events with the appearance of the same fashion in such distant places as Berlin, London, New York, San Francisco and Yokohama. The underlying reason for this remarkable change in the radius and rapidity of communication is the gradual diffusion of cultural traits or, in other words, of meaningful cultural reactions. Among the various types of cultural diffusion that of language itself is of paramount importance. Secondary technical devices making for ease of communication are also, of course, of great importance.

The multiplication of far-reaching techniques of communication has two important results. In the first place, it increases the sheer radius of communication, so that for certain purposes the whole civilized world is made the psychological equivalent of a primitive tribe. In the second place, it lessens the importance of mere geographical contiguity. Owing to the technical nature of these sophisticated communicative devices, parts of the world that are geographically remote may, in terms of behavior, be actually much closer to one another than adjoining regions, which, from the historical standpoint, are supposed to share a larger body of common understandings. This means, of course, a tendency to remap the world both sociologically and psychologically. Even now it is possible to say that the scattered "scientific world" is a social unity which has no clear cut geographical location. Further, the world of urban understanding in America contrasts rather sharply with the rural world. The weakening of the geographical factor in social organization must in the long run profoundly modify our attitude toward the meaning of personal relations and of social classes and even nationalities.

The increasing ease of communication is purchased at a price, for it is becoming increasingly difficult to keep an intended communication within the desired bounds. A humble example of this new problem is the inadvisability of making certain kinds of statement on the telephone. Another example is the insidious cheapening of literary and artistic values due to the foreseen and economically advantageous "widening of the appeal." All effects which demand a certain intimacy of understanding tend to become difficult and are therefore avoided. It is a question whether the obvious increase of overt communication is not constantly being corrected, as it were, by the creation of new obstacles to communication. The fear of being too easily understood may, in many cases, be more aptly defined as the fear of being understood by too many—so many, indeed, as to endanger the psychological reality of the image of the enlarged self confronting the not-self.

On the whole, however, it is rather the obstacles to communication that are felt as annoying or ominous. The most important of these obstacles in the modern world is undoubtedly the great diversity of languages. The enormous amount of energy put into the task of translation implies a passionate desire to make as light of the language difficulty as possible. In the long run it seems almost unavoidable that the civilized world will adopt some one language of intercommunication, say English or Esperanto, which can be set aside for denotive purposes pure and simple.

EDWARD SAPIR

See: SOCIETY; SOCIAL PROCESS; CULTURE; TRADITION;

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SYMBOLISM; COLLECTIVE BEHAVIOR; IMITATION; CONTINUITY, SOCIAL; LANGUAGE; WRITING; PRESS, PUBLIC OPINION.

Editorial Note

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Conceptual Categories in Primitive Languages*

Conceptual categories in primitive languages: Edward Sapir (introduced by C. Wissler). The relation between language and experience is often misunderstood. Language is not merely a more or less systematic inventory of the various items of experience which seem relevant to the individual, as is so often naïvely assumed, but is also a self-contained, creative symbolic organization, which not only refers to experience largely acquired without its help but actually defines experience for us by reason of its formal completeness and because of our unconscious projection of its implicit expectations into the field of experience. In this respect language is very much like a mathematical system, which, also, records experience, in the true sense of the word, only in its crudest beginnings but, as time goes on, becomes elaborated into a self-contained conceptual system which previsages all possible experience in accordance with certain accepted formal limitations. Such categories as number, gender, case, tense, mode, voice, "aspect" and a host of others, many of which are not recognized systematically in our Indo-European languages, are, of course, derivative of experience at last analysis, but, once abstracted from experience, they are systematically elaborated in language and are not so much discovered in experience as imposed upon it because of the tyrannical hold that linguistic form has upon our orientation in the world. Inasmuch as languages differ very widely in their systematization of fundamental concepts, they tend to be only loosely equivalent to each other as symbolic devices and are, as a matter of fact, incommensurable in the sense in which two systems of points in a plane are, on the whole, incommensurable to each other if they are plotted out with references to differing systems of coordinates. The point of view urged in this paper becomes entirely clear only when one compares languages of extremely different structures, as in the case of our Indo-European languages, native American Indian languages and native languages of Africa.

Editorial Note

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DIALECT. This term has a connotation in technical linguistic usage which is somewhat different from its ordinary meaning. To the linguist there is no real difference between a dialect and a language which can be shown to be related, however remotely, to another language. By preference the term is restricted to a form of speech which does not differ sufficiently from another form of speech to be unintelligible to the speakers of the latter. Thus Great Russian and White Russian are said to be dialects of the same language. Similarly, Alsatian, Swabian and Swiss German are dialects or groups of dialects of a common folk speech. Literal mutual intelligibility, however, is not a criterion of great interest to the technical linguist, who is more concerned with the fact and order of historical relationships in speech. To him Venetian and Sicilian are equally dialects of Italian, although as far as mutual intelligibility is concerned these two might as well be called independent languages. Russian, Polish, Czech, Bulgarian and Serbian, conventionally considered as independent languages because of their national affiliations, are no less truly dialects of a common Slavic speech or linguistic prototype than Venetian and Sicilian are dialects of a supposedly common Italian language. If two obviously related forms of speech are spoken at the same time, the linguist does not say that one of them is a dialect of the other but that both are sister dialects of some common prototype, known or inferred. When they diverge so far as not only to be mutually unintelligible but no longer to be too obviously related to each other, the term language is more freely used than dialect, but in principle there is no difference between the two. Thus in a sense all Romance languages, all Celtic languages, all Germanic languages, all Slavic languages and all Indo-Aryan vernaculars are merely dialect groups of a common Aryan or Indo-European language.

A group of dialects is merely the socialized form of the universal tendency to individual variation in speech. These variations affect the phonetic form of the language, its formal characteristics, its vocabulary and such prosodic features as intonation and stress. No known language, unless it be artificially preserved for liturgical or other non-popular uses, has ever been known to resist the tendency to split up into dialects, any one of which may in the long run assume the status of an independent language. From dialects formed by inherent differentiation one may distinguish dialects which owe their origin to speech transfers. A community which takes on a language that is different from the one to which it has originally been accustomed will unconsciously carry over into the adopted language peculiarities of its own form of speech which are pronounced enough to give its use of the foreign language a dialectic tinge. Many linguists attach much importance to the influence of superseded languages in the formation of dialects. Thus some of the distinctive peculiarities of both Celtic and Germanic are supposed to be due to the retention of phonetic peculiarities of pre-Aryan languages.

In less technical or frankly popular usage the term dialect has somewhat different connotations. Human speech is supposed to be differentiated and standardized in a number of approved forms known as languages, and each of these in turn has a number of subvarieties of lesser value known as dialects. A dialect is looked upon as a departure from the standard norm, in many cases even as a corruption of it. Historically this view is unsound, because the vast majority of so-called dialects are merely the regular, differentiated development of earlier forms of speech which antedate the recognized languages. Popular confusion on the subject is chiefly due to the fact that the question of language has become secondarily identified with that of nationality in the larger cultural and ethnic group which in course of time absorbs the local tradition. The language of such a nationality is generally based on a local dialect and spreads at the expense of other dialects which were originally of as great prestige as the culturally more powerful one.

Of the large number of dialects spoken in Germany, German Switzerland and Austria, for example, very few, if any, can be considered

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as modified forms of the culturally accepted *Hochdeutsch* of literature, the pulpit, the stage and general cultural activity. The dialects of the German speaking folk go back unbrokenly to the Old High German of early mediaeval times, a German which was even then richly differentiated into dialects. The present standardized German of the schools arose comparatively late in the history of German speech as a result of the fixing of one of the Upper Saxon dialects as the recognized medium of official communication within the German speaking dominions. Luther's Bible helped considerably in the diffusion of this form of German as the recognized standard. It has taken a long time, however, for *Hochdeutsch* to take on a recognized phonetic form and to be looked upon as a well standardized form of oral communication, and to this day a large proportion of Germans, including the educated ranks, are bilingual in the sense that they use the standardized German for formal purposes but employ the local dialect for more familiar uses.

The history of German is paralleled more or less by the history of all the other national languages of Europe and of other parts of the world. As a result of cultural reasons of one kind or another a local dialect becomes accepted as the favored or desirable form of speech within a linguistic community that is cut up into a large number of dialects. This approved local dialect becomes the symbol of cultural values and spreads at the expense of other local forms of speech. The standardized form of speech becomes more and more set in its vocabulary, its form and eventually its pronunciation. The speakers of local dialects begin to be ashamed of their peculiar forms of speech because these have not the prestige value of the standardized language; and finally the illusion is created of a primary language, belonging to the large area which is the territory of a nation or nationality, and of the many local forms of speech as uncultured or degenerated variants of the primary norm. As is well known, these variations from the norm are sometimes much more archaic, historically speaking, than the norm from which they are supposed to depart.

Local dialects are in a sense minority languages, but the latter term should be reserved for a completely distinct form of speech that is used by a minority nationality living within the political framework of a nation. An example of such a minority language would be the Basque of southwestern France and northern Spain or the Breton of Brittany. These languages are not dialects of French and Spanish but historically distinct languages that have come to occupy culturally secondary positions.

There is naturally no hard and fast line between a dialect and a local variation of a minor nature, such as New England English or middle western English. In the case of the older dialects the connection with the standardized speech is quite secondary, while in the case of such local variations as New England and middle western American speech standard English, however loosely defined, is present in the minds of all as the natural background for these variations, which are thus psychologically, if not altogether historically, variations from the primary or standard norm. It would be possible for the speaker of a local Swiss dialect or of Yorkshire English to build up a nationalistic gospel around his local dialect in opposition to the accepted speech of the cultured group, but the attempt to do this for middle western English in America would have something intrinsically absurd about it because of the feeling that this form of English is at best but a belated departure from an earlier norm. As usual in social phenomena, however, it is the symbolism of attitude that counts in these matters rather than the objective facts of history.

Ever since the formation of the great national languages of Europe toward the end of the mediaeval period there have been many social and political influences at work to imperil the status of the local dialects. As the power of the sovereign grew, the language of the court gained in prestige and tended to diffuse through all the ramifications of the official world. Meanwhile, although the Roman Catholic and Greek churches with their sacred liturgical languages were little interested in the question of folk versus standardized speech, the Protestant sects with their concern for a more direct relation between God and His worshipers emphasized the dignity of folk speech and lent their aid to the diffusion of a selected form of folk speech over a larger area. The influence of such documents as Luther's Bible and King James' authorized version in the standardization of German and English has often been referred to. In more recent days the increase of popular education and the growing demand for ready intelligibility in the business world have given a tremendous impetus to the spread of standardized forms of speech.

In spite of all these standardizing influences, however, local dialects, particularly in Europe, have persisted with a vitality that is little short of amazing. Obviously the question of the conservatism of dialect is not altogether a negative matter of the inertia of speech and of the failure of overriding cultural influences to permeate into all corners of a given territory. It is to a very significant degree a positive matter of the resistance of the local dialects to something which is vaguely felt as hostile. This is easily understood if we look upon languages and dialects not as intrinsically good or bad forms of speech but as symbols of social attitudes. Before the growth of modern industrialism culture tended to be intensely local in character in spite of the uniformizing influences of government, religion, education and business. The culture that gradually seeped in from the great urban centers was felt as something alien and superficial in spite of the prestige that unavoidably attached to it. The home speech was associated with kinship ties and with the earliest emotional experiences of the individual. Hence the learning of a standardized language could hardly seem natural except in the few centers in which the higher culture seemed properly at home, and even in these there generally developed a hiatus between the standardized language of the cultured classes and the folk speech of the local residents. Hence cockney is as far removed psychologically from standard British English as is a peasant dialect of Yorkshire or Devon. On the continent of Europe, particularly in Germany and Italy, the culture represented, for example, by standardized German or standardized Italian was until very recent days an exceedingly thin psychological structure, and its official speech could hardly take on the task of adequately symbolizing the highly differentiated folk cultures of German speaking and Italian speaking regions.

The Age of Enlightenment in the eighteenth century was, on the whole, hostile to the persistence of dialects, but the romantic movement which followed it gave to folk speech a glamour which has probably had something to do with the idealization of localized languages as symbols of national solidarity and territorial integrity. Few writers of the seventeenth and eighteenth centuries would have taken seriously the use of dialect in literature. It was only later that Lowland Scotch could be romantically restored in the lyrics of Robert Burns, that Fritz Reuter could strive to establish a Low German (Plattdeutsch) literary language and that Mistral could attempt to revive the long lost glory of Provençal. One may suggest that this renewed emphasis on linguistic differences is but a passing phase in the history of modern man. Be that as it may, it has had much to do with the emergence of new nationalisms in recent times. It is doubtful if such countries as Lithuania, Estonia and Czechoslovakia could have so easily proved their right to exist if it had not come to be felt that just as every nationality needs its language, so every unattached language needs its nationality and territorial independence to fulfil its inherent mission. Perhaps the best example of what might be called linguistic romanticism is the attempt of the Irish nationalists to renew the vitality of Gaelic, a form of speech which has never been standardized for literary, let alone folk, purposes and which is profoundly alien to the majority of the more articulate of Irish nationalists.

No doubt the respect for local forms of speech has received assistance from scientific linguistics and its tendency to view all languages and dialects as of equal historical importance. It is very doubtful, however, if linguistic localism can win out in the long run. The modern mind is increasingly realistic and pragmatic in the world of action and conceptualistic or normative in the world of thought. Both of these attitudes are intrinsically hostile to linguistic localism of any sort and necessarily therefore to dialectic conservatism. Compulsory education, compulsory military service, modern means of communication and urbanization are some of the more obvious factors in the spread of these attitudes, which, so far as language is concerned, may be defined by the thesis that words should either lead to unambiguous action among the members of as large a group as is held together culturally or in the domain of thought should aim to attach themselves to concepts which are less and less purely local in their application. In the long run therefore it seems fairly safe to hazard the guess that such movements as the Gaelic revival in Ireland and the attempt to save as many minority languages and dialects from cultural extinction as possible will come to be looked upon as little more than eddies in the more powerful stream of standardization of speech that set in at the close of the mediaeval period. The modern problem is more complex than the classical or the mediaeval problem, because the modern mind

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insists on having the process of standardization take the form of a democratic rather than an aristocratic process.

A word may be added in regard to the social psychology of dialectic forms of speech. In the main, markedly dialectic peculiarities have been looked upon as symbols of inferiority of status, but if local sentiment is strongly marked and if the significance of the local group for the larger life of the nation as a whole allows, a local dialect may become the symbol of a kind of inverted pride. We thus have the singular spectacle of Lowland Scotch as an approved and beautiful linguistic instrument and of cockney as an undesirable and ugly one. These judgments are extrinsic to the facts of language themselves but they are none the less decisive in the world of cultural symbolisms.

If an individual is brought up in a community that has its characteristic dialect and if he becomes identified later in life with another community which has a second mode of speech, some very interesting personality problems arise which involve the status symbolism or affectional symbolism of these differing forms of speech. Individuals who vacillate somewhat in their conception of their own role in society may often be detected unconsciously betraying this feeling of insecurity in a vacillating pronunciation or intonation or choice of words. When under the influence of an emotional crisis such individuals are thrown back upon their earliest emotional experiences—"regress," in short—they are likely to relapse into early dialectic habits of speech. It is suggested that the question of the relation of the individual to the various dialects and languages to which he has been subjected from time to time is of far more than anecdotal interest, that it constitutes as a matter of fact a very important approach to the problem of personality subjected to the strains of cultural change.

EDWARD SAPIR

See: LANGUAGE; LOCALISM; CENTRALIZATION; CUSTOM.

Consult: Jespersen, J. O. H., *Language: Its Nature, Development and Origin* (London 1922); Bally, Charles, *Le langage et la vie* (Paris 1926); Vendryes, Joseph, *Le langage: introduction linguistique à l'histoire* (Paris 1921), tr. by Paul Radin, History of Civilisation series (London 1925); Meillet, Antoine, *Les langues dans l'Europe nouvelle* (2nd ed. Paris 1928).

Editorial Note

In: *Encyclopaedia of the Social Sciences*, vol. 5 (New York: Macmillan, 1931), pp. 123–126. [Reprinted in: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949, pp. 83–88]

The following errors in the originally published version have been corrected directly into the text printed here (page references are to the original):
p. 126, bibliography: Vendryès (correct: Vendryes)
p. 126, bibliography: *l'europe* (correct: *l'Europe*)

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LANGUAGE. The gift of speech and a well ordered language are characteristic of every known group of human beings. No tribe has ever been found which is without language and all statements to the contrary may be dismissed as mere folklore. There seems to be no warrant whatever for the statement which is sometimes made that there are certain peoples whose vocabulary is so limited that they cannot get on without the supplementary use of gesture, so that intelligible communication between members of such a group becomes impossible in the dark. The truth of the matter is that language is an essentially perfect means of expression and communication among every known people. Of all aspects of culture it is a fair guess that language was the first to receive a highly developed form and that its essential perfection is a prerequisite to the development of culture as a whole.

There are some general characteristics which apply to all languages, living or extinct, written or unwritten. In the first place language is primarily a system of phonetic symbols for the expression of communicable thought and feeling. In other words, the symbols of language are differentiated products of the vocal behavior which is associated with the larynx of the higher mammals. As a mere matter of theory it is conceivable that something like a linguistic structure could have been evolved out of gesture or other forms of bodily behavior. The fact that at an advanced stage in the history of the human race writing emerged in close imitation of the patterns of spoken language proves that language as a purely instrumental and logical device is not dependent on the use of articulate sounds. Nevertheless, the actual history of man and a wealth of anthropological evidence indicate with overwhelming certainty that phonetic language takes precedence over all other kinds of communicative symbolism, which are by comparison either substitutive, like writing, or merely supplementary, like the gesture accompanying speech. The speech apparatus which is used in the articulation of language is the same for all known peoples. It consists of the larynx, with its delicately adjustable glottal chords, the nose, the tongue, the hard and soft palate, the teeth and the lips. While the original impulses leading to speech may be thought of as localized in the larynx, the finer phonetic articulations are due chiefly to the muscular activity of the tongue, an organ whose primary function has of course nothing whatever to do with sound production but which in actual speech behavior is indispensable for the development of emotionally expressive sound into what we call language. It is so indispensable in fact that one of the most common terms for language or speech is "tongue." Language is thus not a simple biological function even as regards the simple matter of sound production, for primary laryngeal patterns of behavior have had to be completely overhauled by the interference of lingual, labial and nasal modifications before a "speech organ" was ready for work. Perhaps it is because this speech organ is a diffused and secondary network of physiological activities which do not correspond to the primary functions of the organs involved that language has been enabled to free itself from direct bodily expressiveness.

Not only are all languages phonetic in character; they are also "phonemic." Between the articulation of the voice into the phonetic sequence, which is immediately audible as a mere sensation, and the complicated patterning of phonetic sequences into such symbolically significant entities as words, phrases and sentences there is a very interesting process of phonetic selection and generalization which is easily overlooked but which is crucial for the development of the specifically symbolic aspect of language. Language is not merely articulated sound; its significant structure is dependent upon the unconscious selection of a fixed number of "phonetic stations," or sound units. These are in actual behavior individually modifiable; but the essential point is that through the unconscious selection of sounds as phonemes definite psychological barriers are erected between various phonetic stations, so that speech ceases to be an expressive flow of sound and becomes a symbolic composition with limited materials or units. The analogy with musical theory seems quite fair. Even the most resplendent and dynamic symphony is built up of tangibly distinct musical entities or notes which in the physical world flow into each other in an indefinite continuum but which in the world of aesthetic composition and appreciation are definitely bounded off against each other, so that they may enter into an intricate mathematics of significant relationships. The phonemes of a language are in principle a distinct system peculiar to the given language, and its words must be made up, in unconscious theory if not always in actualized behavior, of these phonemes. Languages differ very widely in their phonemic structure. But whatever the details of these structures may be,

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the important fact remains that there is no known language which has not a perfectly definite phonemic system. The difference between a sound and a phoneme can be illustrated by a simple example in English. If the word matter is pronounced in a slovenly fashion, as in the phrase "What's the matter?" the *t* sound, not being pronounced with the full energy required to bring out its proper physical characteristics, tends to slip into a *d*. Nevertheless, this phonetic *d* will not be felt as a functional *d* but as a variety of *t* of a particular type of expressiveness. Obviously the functional relation between the proper *t* sound of such a word as matter and its *d* variant is quite other than the relation of the *t* of such a word as town and the *d* of down. In every known language it is possible to distinguish merely phonetic variations, whether expressive or not, from symbolically functional ones of a phonemic order.

In all known languages phonemes are built up into distinct and arbitrary sequences which are at once recognized by the speakers as meaningful symbols of reference. In English, for instance, the sequence *g* plus *o* in the word go is an unanalyzable unit and the meaning attaching to the symbol cannot be derived by relating to each other values which might be imputed to the *g* and to the *o* independently. In other words, while the mechanical functional units of language are phonemes, the true units of language as symbolism are conventional groupings of such phonemes. The size of these units and the laws of their mechanical structure vary widely in the different languages and their limiting conditions may be said to constitute the phonemic mechanics, or phonology, of a particular language. But the fundamental theory of sound symbolism remains the same everywhere. The formal behavior of the irreducible symbol also varies within wide limits in the languages of the world. Such a unit may be either a complete word, as in the English example already given, or a significant element, like the suffix *ness* of goodness. Between the meaningful and unanalyzable word or word element and the integrated meaning of continuous discourse lies the whole complicated field of the formal procedures which are intuitively employed by the speakers of a language in order to build up aesthetically and functionally satisfying symbol sequences out of the theoretically isolable units. These procedures constitute grammar, which may be defined as the sum total of formal economies intuitively recognized by the speakers of a language. There seem to be no types of cultural patterns which vary more surprisingly and with a greater exuberance of detail than the morphologies of the known languages. In spite of endless differences of detail, however, it may justly be said that all grammars have the same degree of fixity. One language may be more complex or difficult grammatically than another, but there is no meaning whatever in the statement which is sometimes made that one language is more grammatical, or form bound, than another. Our rationalizations of the structure of our own language lead to a self-consciousness of speech and of academic discipline which are of course interesting psychological and social phenomena in themselves but have very little to do with the question of form in language.

Besides these general formal characteristics language has certain psychological qualities which make it peculiarly important for the student of social science. In the first place, language is felt to be a perfect symbolic system, in a perfectly homogeneous medium, for the handling of all references and meanings that a given culture is capable of, whether these be in the form of actual communications or in that of such ideal substitutes of communication as thinking. The content of every culture is expressible in its language and there are no linguistic materials whether as to content or form which are not felt to symbolize actual meanings, whatever may be the attitude of those who belong to other cultures. New cultural experiences frequently make it necessary to enlarge the resources of a language, but such enlargement is never an arbitrary addition to the materials and forms already present; it is merely a further application of principles already in use and in many cases little more than a metaphorical extension of old terms and meanings. It is highly important to realize that once the form of a language is established it can discover meanings for its speakers which are not simply traceable to the given quality of experience itself but must be explained to a large extent as the projection of potential meanings into the raw material of experience. If a man who has never seen more than a single elephant in the course of his life nevertheless speaks without the slightest hesitation of ten elephants or a million elephants or a herd of elephants or of elephants walking two by two or three by three or of generations of elephants, it is obvious that language has the power to analyze experience into theoretically dissociable elements and to create that world of the potential intergrading

with the actual which enables human beings to transcend the immediately given in their individual experiences and to join in a larger common understanding. This common understanding constitutes culture, which cannot be adequately defined by a description of those more colorful patterns of behavior in society which lie open to observation. Language is heuristic, not merely in the simple sense which this example suggests but in the much more far reaching sense that its forms predetermine for us certain modes of observation and interpretation. This means of course that as our scientific experience grows we must learn to fight the implications of language. "The grass waves in the wind" is shown by its linguistic form to be a member of the same relational class of experiences as "The man works in the house." As an interim solution of the problem of expressing the experience referred to in this sentence it is clear that the language has proved useful, for it has made significant use of certain symbols of conceptual relation, such as agency and location. If we feel the sentence to be poetic or metaphorical, it is largely because other more complex types of experience with their appropriate symbolisms of reference enable us to reinterpret the situation and to say, for instance, "The grass is waved by the wind" or "The wind causes the grass to wave." The point is that no matter how sophisticated our modes of interpretation become, we never really get beyond the projection and continuous transfer of relations suggested by the forms of our speech. After all, to say that "Friction causes such and such a result" is not very different from saying that "The grass waves in the wind." Language is at one and the same time helping and retarding us in our exploration of experience, and the details of these processes of help and hindrance are deposited in the subtler meanings of different cultures.

A further psychological characteristic of language is the fact that while it may be looked upon as a symbolic system which reports or refers to or otherwise substitutes for direct experience, it does not as a matter of actual behavior stand apart from or run parallel to direct experience but completely interpenetrates with it. This is indicated by the widespread feeling, particularly among primitive people, of that virtual identity or close correspondence of word and thing which leads to the magic of spells. On our own level it is generally difficult to make a complete divorce between objective reality and our linguistic symbols of reference to it; and things, qualities and events are on the whole felt to be what they are called. For the normal person every experience, real or potential, is saturated with verbalism. This explains why so many lovers of nature, for instance, do not feel that they are truly in touch with it until they have mastered the names of a great many flowers and trees, as though the primary world of reality were a verbal one and as though one could not get close to nature unless one first mastered the terminology which somehow magically expresses it. It is this constant interplay between language and experience which removes language from the cold status of such purely and simply symbolic systems as mathematical symbolism or flag signaling. This interpenetration is not only an intimate associative fact; it is also a contextual one. It is important to realize that language may not only refer to experience or even mold, interpret and discover experience but that it also substitutes for it in the sense that in those sequences of interpersonal behavior which form the greater part of our daily lives speech and action supplement each other and do each other's work in a web of unbroken pattern. If one says to me "Lend me a dollar," I may hand over the money without a word or I may give it with an accompanying "Here it is" or I may say "I haven't got it. I'll give it to you tomorrow." Each of these responses is structurally equivalent, if one thinks of the larger behavior pattern. It is clear that if language is in its analyzed form a symbolic system of reference it is far from being merely that if we consider the psychological part that it plays in continuous behavior. The reason for this almost unique position of intimacy which language holds among all known symbolisms is probably the fact that it is learned in the earliest years of childhood.

It is because it is learned early and piecemeal, in constant association with the color and the requirements of actual contexts, that language in spite of its quasi-mathematical form is rarely a purely referential organization. It tends to be so only in scientific discourse, and even there it may be seriously doubted whether the ideal of pure reference is ever attained by language. Ordinary speech is directly expressive and the purely formal patterns of sounds, words, grammatical forms, phrases and sentences are always to be thought of as compounded with intended or unintended symbolisms of expression, if they are to be understood fully from the standpoint of behavior. The choice of words in a particular context may convey the opposite of what they

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mean on the surface. The same external message is differently interpreted according to whether the speaker has this or that psychological status in his personal relations, or whether such primary expressions as those of affection or anger or fear may inform the spoken words with a significance which completely transcends their normal value. On the whole, however, there is no danger that the expressive character of language will be overlooked. It is too obvious a fact to call for much emphasis. What is often overlooked and is, as a matter of fact, not altogether easy to understand is that the quasi-mathematical patterns, as we have called them, of the grammarian's language, unreal as these are in a contextual sense, have nevertheless a tremendous intuitional vitality; and that these patterns, never divorced in experience from the expressive ones, are nevertheless easily separated from them by the normal individual. The fact that almost any word or phrase can be made to take on an infinite variety of meanings seems to indicate that in all language behavior there are intertwined in enormously complex patterns isolable patterns of two distinct orders. These may be roughly defined as patterns of reference and patterns of expression.

That language is a perfect symbolism of experience, that in the actual contexts of behavior it cannot be divorced from action and that it is the carrier of an infinitely nuanced expressiveness are universally valid psychological facts. There is a fourth general psychological peculiarity which applies more particularly to the languages of sophisticated peoples. This is the fact that the referential form systems which are actualized in language behavior do not need speech in its literal sense in order to preserve their substantial integrity. The history of writing is in essence the long attempt to develop an independent symbolism on the basis of graphic representation, followed by the slow and begrudging realization that spoken language is a more powerful symbolism than any graphic one can possibly be and that true progress in the art of writing lay in the virtual abandonment of the principle with which it originally started. Effective systems of writing, whether alphabetic or not, are more or less exact transfers of speech. The original language system may maintain itself in other and remoter transfers, one of the best examples of these being the Morse telegraph code. It is a very interesting fact that the principle of linguistic transfer is not entirely absent even among the unlettered peoples of the world. Some at least of the drum signal and horn signal systems of the west African natives are in principle transfers of the organizations of speech, often in minute phonetic detail.

Many attempts have been made to unravel the origin of language but most of these are hardly more than exercises of the speculative imagination. Linguists as a whole have lost interest in the problem and this for two reasons. In the first place, it has come to be realized that there exist no truly primitive languages in a psychological sense, that modern researches in archaeology have indefinitely extended the time of man's cultural past and that it is therefore vain to go much beyond the perspective opened up by the study of actual languages. In the second place, our knowledge of psychology, particularly of the symbolic processes in general, is not felt to be sound enough or far reaching enough to help materially with the problem of the emergence of speech. It is probable that the origin of language is not a problem that can be solved out of the resources of linguistics alone but that it is essentially a particular case of a much wider problem of the genesis of symbolic behavior and of the specialization of such behavior in the laryngeal region, which may be presumed to have had only expressive functions to begin with. Perhaps a close study of the behavior of very young children under controlled conditions may provide some valuable hints, but it seems dangerous to reason from such experiments to the behavior of precultural man. It is more likely that the kinds of studies which are now in progress of the behavior of the higher apes will help supply some idea of the genesis of speech.

The most popular earlier theories were the interjectional and onomatopoetic theories. The former derived speech from involuntary cries of an expressive nature, while the latter maintained that the words of actual language are conventionalized forms of imitation of the sounds of nature. Both of these theories suffer from two fatal defects. While it is true that both interjectional and onomatopoetic elements are found in most languages, they are always relatively unimportant and tend to contrast somewhat with the more normal materials of language. The very fact that they are constantly being formed anew seems to indicate that they belong rather to the directly expressive layer of speech which intercrosses with the main level of referential symbolism. The second difficulty is even more serious. The essential problem of the origin of

speech is not to attempt to discover the kinds of vocal elements which constitute the historical nucleus of language. It is rather to point out how vocal articulations of any sort could become dissociated from their original expressive value. About all that can be said at present is that while speech as a finished organization is a distinctly human achievement, its roots probably lie in the power of the higher apes to solve specific problems by abstracting general forms or schemata from the details of given situations; that the habit of interpreting certain selected elements in a situation as signs of a desired total one gradually led in early man to a dim feeling for symbolism; and that in the long run and for reasons which can hardly be guessed at the elements of experience which were most often interpreted in a symbolic sense came to be the largely useless or supplementary vocal behavior that must have often attended significant action. According to this point of view language is not so much directly developed out of vocal expression as it is an actualization in terms of vocal expression of the tendency to master reality, not by direct and ad hoc handling of its elements but by the reduction of experience to familiar forms. Vocal expression is only superficially the same as language. The tendency to derive speech from emotional expression has not led to anything tangible in the way of scientific theory and the attempt must now be made to see in language the slowly evolved product of a peculiar technique or tendency which may be called the symbolic one, and to see the relatively meaningless or incomplete part as a sign of the whole. Language then is what it is essentially not because of its admirable expressive power but in spite of it. Speech as behavior is a wonderfully complex blend of two pattern systems, the symbolic and the expressive, neither of which could have developed to its present perfection without the interference of the other.

It is difficult to see adequately the functions of language, because it is so deeply rooted in the whole of human behavior that it may be suspected that there is little in the functional side of our conscious behavior in which language does not play its part. The primary function of language is generally said to be communication. There can be no quarrel with this so long as it is distinctly understood that there may be effective communication without overt speech and that language is highly relevant to situations which are not obviously of a communicative sort. To say that thought, which is hardly possible in any sustained sense without the symbolic organization brought by language, is that form of communication in which the speaker and the person addressed are identified in one person is not far from begging the question. The autistic speech of children seems to show that the purely communicative aspect of language has been exaggerated. It is best to admit that language is primarily a vocal actualization of the tendency to see reality symbolically, that it is precisely this quality which renders it a fit instrument for communication and that it is in the actual give and take of social intercourse that it has been complicated and refined into the form in which it is known today. Besides the very general function which language fulfils in the spheres of thought, communication and expression which are implicit in its very nature there may be pointed out a number of special derivatives of these which are of particular interest to students of society.

Language is a great force of socialization, probably the greatest that exists. By this is meant not merely the obvious fact that significant social intercourse is hardly possible without language but that the mere fact of a common speech serves as a peculiarly potent symbol of the social solidarity of those who speak the language. The psychological significance of this goes far beyond the association of particular languages with nationalities, political entities or smaller local groups. In between the recognized dialect or language as a whole and the individualized speech of a given individual lies a kind of linguistic unit which is not often discussed by the linguist but which is of the greatest importance to social psychology. This is the subform of a language which is current among a group of people who are held together by ties of common interest. Such a group may be a family, the undergraduates of a college, a labor union, the underworld in a large city, the members of a club, a group of four or five friends who hold together through life in spite of differences of professional interest, and untold thousands of other kinds of groups. Each of these tends to develop peculiarities of speech which have the symbolic function of somehow distinguishing the group from the larger group into which its members might be too completely absorbed. The complete absence of linguistic indices of such small groups is obscurely felt as a defect or sign of emotional poverty. Within the confines of a particular family, for instance, the name Georgy, having once been mispronounced

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Doody in childhood, may take on the latter form forever after; and this unofficial pronunciation of a familiar name as applied to a particular person becomes a very important symbol indeed of the solidarity of a particular family and of the continuance of the sentiment that keeps its members together. A stranger cannot lightly take on the privilege of saying Doody if the members of the family feel that he is not entitled to go beyond the degree of familiarity symbolized by the use of Georgy or George. Again, no one is entitled to say "trig" or "math" who has not gone through certain familiar and painful experiences as a high school or undergraduate student. The use of such words at once declares the speaker a member of an unorganized but psychologically real group. A self-made mathematician has hardly the right to use the word "math" in referring to his own interests because the student overtones of the word do not properly apply to him. The extraordinary importance of minute linguistic differences for the symbolization of psychologically real as contrasted with politically or sociologically official groups is intuitively felt by most people. "He talks like us" is equivalent to saying "He is one of us."

There is another important sense in which language is a socializer beyond its literal use as a means of communication. This is in the establishment of rapport between the members of a physical group, such as a house party. It is not what is said that matters so much as that something is said. Particularly where cultural understandings of an intimate sort are somewhat lacking among the members of a physical group it is felt to be important that the lack be made good by a constant supply of small talk. This caressing or reassuring quality of speech in general, even where no one has anything of moment to communicate, reminds us how much more language is than a mere technique of communication. Nothing better shows how completely the life of man as an animal made over by culture is dominated by the verbal substitutes for the physical world.

The use of language in cultural accumulation and historical transmission is obvious and important. This applies not only to sophisticated levels but to primitive ones as well. A great deal of the cultural stock in trade of a primitive society is presented in a more or less well defined linguistic form. Proverbs, medicine formulae, standardized prayers, folk tales, standardized speeches, song texts, genealogies, are some of the more overt forms which language takes as a culture preserving instrument. The pragmatic ideal of education, which aims to reduce the influence of standardized lore to a minimum and to get the individual to educate himself through as direct a contact as possible with the facts of his environment, is certainly not realized among the primitives, who are often as word bound as the humanistic tradition itself. Few cultures perhaps have gone to the length of the classical Chinese culture or of rabbinical Jewish culture in making the word do duty for the thing or the personal experience as the ultimate unit of reality. Modern civilization as a whole, with its schools, its libraries and its endless stores of knowledge, opinion and sentiment stored up in verbalized form, would be unthinkable without language made eternal as document. On the whole, we probably tend to exaggerate the differences between "high" and "low" cultures or saturated and emergent cultures in the matter of traditionally conserved verbal authority. The enormous differences that seem to exist are rather differences in the outward form and content of the cultures themselves than in the psychological relation which obtains between the individual and his culture.

In spite of the fact that language acts as a socializing and uniformizing force it is at the same time the most potent single known factor for the growth of individuality. The fundamental quality of one's voice, the phonetic patterns of speech, the speed and relative smoothness of articulation, the length and build of the sentences, the character and range of the vocabulary, the stylistic consistency of the words used, the readiness with which words respond to the requirements of the social environment, in particular the suitability of one's language to the language habits of the person addressed—all these are so many complex indicators of the personality. "Actions speak louder than words" may be an excellent maxim from the pragmatic point of view but betrays little insight into the nature of speech. The language habits of people are by no means irrelevant as unconscious indicators of the more important traits of their personalities, and the folk is psychologically wiser than the adage in paying a great deal of attention willingly or not to the psychological significance of a man's language. The normal person is never convinced by the mere content of speech but is very sensitive to many of the implications of language behavior, however feebly (if at all) these may have been consciously analyzed. All

in all, it is not too much to say that one of the really important functions of language is to be constantly declaring to society the psychological place held by all of its members. Besides this more general type of personality expression or fulfilment there is to be kept in mind the important role which language plays as a substitutive means of expression for those individuals who have a greater than normal difficulty in adjusting themselves to the environment in terms of primary action patterns. Even in the most primitive cultures the strategic word is likely to be more powerful than the direct blow. It is unwise to speak too blithely of "mere" words, for to do so may be to imperil the value and perhaps the very existence of civilization and personality.

The languages of the world may be classified either structurally or genetically. An adequate structural analysis is an intricate matter and no classification seems to have been suggested which does justice to the bewildering variety of known forms. It is useful to recognize three distinct criteria of classification: the relative degree of synthesis or elaboration of the words of the language; the degree to which the various parts of a word are welded together; and the extent to which the fundamental relational concepts of the language are directly expressed as such. As regards synthesis languages range all the way from the isolating type, in which the single word is essentially unanalyzable, to the type represented by many American Indian languages, in which the single word is functionally often the equivalent of a sentence with many concrete references that would in most languages require the use of a number of words. Four stages of synthesis may be conveniently recognized; the isolating type, the weakly synthetic type, the fully synthetic type and the polysynthetic type. The classical example of the first type is Chinese, which does not allow the words of the language to be modified by internal changes or the addition of prefixed or suffixed elements to express such concepts as those of number, tense, mode, case relation and the like. This seems to be one of the more uncommon types of language and is best represented by a number of languages in eastern Asia. Besides Chinese itself Siamese, Burmese, modern Tibetan, Annamite and Khmer, or Cambodian, may be given as examples. The older view, which regarded such languages as representing a peculiarly primitive stage in the evolution of language, may now be dismissed as antiquated. All evidence points to the contrary hypothesis that such languages are the logically extreme analytic developments of more synthetic languages which because of processes of phonetic disintegration have had to compress by analytical means combinations of ideas originally expressed within the framework of the single word. The weakly synthetic type of language is best represented by the most familiar modern languages of Europe, such as English, French, Spanish, Italian, German, Dutch and Danish. Such languages modify words to some extent but have only a moderate formal elaboration of the word. The plural formations of English and French, for instance, are relatively simple and the tense and modal systems of all the languages of this type tend to use analytic methods as supplementary to the older synthetic one. The third group of languages is represented by such languages as Arabic and earlier Indo-European languages, like Sanskrit, Latin and Greek. These are all languages of great formal complexity, in which classificatory ideas, such as sex gender, number, case relations, tense and mood, are expressed with considerable nicety and in a great variety of ways. Because of the rich formal implications of the single word the sentence tends not to be so highly energized and ordered as in the first mentioned types. Lastly, the polysynthetic languages add to the formal complexity of the treatment of fundamental relational ideas the power to arrange a number of logically distinct, concrete ideas into an ordered whole within the confines of a single word. Eskimo and Algonquin are classical examples of this type.

From the standpoint of the mechanical cohesiveness with which the elements of words are united languages may be conveniently grouped into four types. The first of these, in which there is no such process of combination, is the isolating type already referred to. To the second group of languages belong all those in which the word can be adequately analyzed into a mechanical sum of elements, each of which has its more or less clearly established meaning and each of which is regularly used in all other words into which the associated notion enters. These are the so-called agglutinative languages. The majority of languages seem to use the agglutinative technique, which has the great advantage of combining logical analysis with economy of means. The Altaic languages, of which Turkish is a good example, and the Bantu languages of Africa are agglutinative in form. In the third type, the so-called inflective languages, the degree of union between the radical element or

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stem of the word and the modifying prefixes or suffixes is greater than in the agglutinative languages, so that it becomes difficult in many cases to isolate the stem and set it off against the accreted elements. More important than this, however, is the fact that there is less of a one to one correspondence between the linguistic element and the notion referred to than in the agglutinative languages. In Latin, for instance, the notion of plurality is expressed in a great variety of ways which seem to have little phonetic connection with each other. For example, the final vowel or diphthong of *equi* (horses), *dona* (gifts), *mensae* (tables) and the final vowel and consonant of *hostes* (enemies) are functionally equivalent elements the distribution of which is dependent on purely formal and historical factors that have no logical relevance. Furthermore in the verb the notion of plurality is quite differently expressed, as in the last two consonants of *amant* (they love). It used to be fashionable to contrast in a favorable sense the "chemical" qualities of such inflective languages as Latin and Greek with the soberly mechanical quality of such languages as Turkish. But these evaluations may now be dismissed as antiquated and subjective. They were obviously due to the fact that scholars who wrote in English, French and German were not above rationalizing the linguistic structures with which they were most familiar into a position of ideal advantage. As an offshoot of the inflective languages may be considered a fourth group, those in which the processes of welding, due to the operation of complex phonetic laws, have gone so far as to result in the creation of patterns of internal change of the nuclear elements of speech. Such familiar English examples as the words sing, sang, sung, song will serve to give some idea of the nature of these structures, which may be termed symbolistiç. The kinds of internal change which may be recognized are changes in vocalic quality, changes in consonants, changes in quantity, various types of reduplication or repetition, changes in stress accent and, as in Chinese and many African languages, changes in pitch. The classical example of this type of language is Arabic, in which as in the other Semitic languages nuclear meanings are expressed by sequences of consonants, which have, however, to be connected by significant vowels whose sequence patterns establish fixed functions independent of the meanings conveyed by the consonantal framework.

Elaboration and technique of word analysis are perhaps of less logical and psychological significance than the selection and treatment of fundamental relational concepts for grammatical treatment. It would be very difficult, however, to devise a satisfactory conceptual classification of languages because of the extraordinary diversity of the concepts and classifications of ideas which are illustrated in linguistic form. In the Indo-European and Semitic languages, for instance, noun classification on the basis of gender is a vital principle of structure; but in most of the other languages of the world this principle is absent, although other methods of noun classification are found. Again, tense or case relations may be formally important in one language, for example, Latin, but of relatively little grammatical importance in another, although the logical references implied by such forms must naturally be taken care of in the economy of the language, as, for instance, by the use of specific words within the framework of the sentence. Perhaps the most fundamental conceptual basis of classification is that of the expression of fundamental syntactic relations as such versus their expression in necessary combination with notions of a concrete order. In Latin, for example, the notion of the subject of a predicate is never purely expressed in a formal sense, because there is no distinctive symbol for this relation. It is impossible to render it without at the same time defining the number and gender of the subject of the sentence. There are languages, however, in which syntactic relations are expressed purely, without admixture of implications of a nonrelational sort. We may speak therefore of pure relational languages as contrasted with mixed relational languages. Most of the languages with which we are familiar belong to the latter category. It goes without saying that such a conceptual classification has no direct relation to the other two types of classification which we have mentioned.

The genetic classification of languages is one which attempts to arrange the languages of the world in groups and subgroups in accordance with the main lines of historical connection, which can be worked out on the basis either of documentary evidence or of a careful comparison of the languages studied. Because of the far reaching effect of slow phonetic changes and of other causes languages which were originally nothing but dialects of the same form of speech have diverged so widely that it is not apparent that they are but specialized developments of a single prototype. An enormous amount of work

has been done in the genetic classification and subclassification of the languages of the world, but very many problems still await research and solution. At the present time it is known definitely that there are certain very large linguistic groups, or families, as they are often called, the members of which may, roughly speaking, be looked upon as lineally descended from languages which can be theoretically reconstructed in their main phonetic and structural outlines. It is obvious, however, that languages may so diverge as to leave little trace of their original relationship. It is therefore very dangerous to assume that languages are not at last analysis divergent members of a single genetic group merely because the evidence is negative. The only contrast that is legitimate is between languages known to be historically related and languages not known to be so related. Languages known to be related cannot be legitimately contrasted with languages known not to be related.

Because of the fact that languages have differentiated at different rates and because of the important effects of cultural diffusion, which have brought it about that strategically placed languages, such as Arabic, Latin and English, have spread over large parts of the earth at the expense of others, very varied conditions are found to prevail in regard to the distribution of linguistic families. In Europe, for instance, there are only two linguistic families of importance represented today, the Indo-European languages and the Ugro-Finnic languages, of which Finnish and Hungarian are examples. The Basque dialects of southern France and northern Spain are the survivors of another and apparently isolated group. On the other hand, in aboriginal America the linguistic differentiation is extreme and a surprisingly large number of essentially unrelated linguistic families must be recognized. Some of the families occupy very small areas, while others, such as the Algonquin and the Athabaskan languages of North America, are spread over a large territory. The technique of establishing linguistic families and of working out the precise relationship of the languages included in these families is too difficult to be gone into here. It suffices to say that random word comparisons are of little importance. Experience shows that very precise phonetic relations can be worked out between the languages of a group and that on the whole fundamental morphological features tend to preserve themselves over exceedingly long periods of time. Thus modern Lithuanian is in structure, vocabulary and, to a large extent, even phonemic pattern very much the kind of a language which must be assumed as the prototype for the Indo-European languages as a whole. In spite of the fact that structural classifications are in theory unrelated to genetic ones and in spite of the fact that languages can be shown to have influenced each other, not only in phonetics and vocabulary but also to an appreciable extent in structure, it is not often found that the languages of a genetic group exhibit utterly irreconcilable structures. Thus even English, which is one of the least conservative of Indo-European languages, has many far reaching points of structure in common with as remote a language as Sanskrit in contrast, say, to Basque or Finnish. Again, different as are Assyrian, modern Arabic and the Semitic languages of Abyssinia they exhibit numerous points of resemblance in phonetics, vocabulary and structure which set them off at once from, say, Turkish or the Negro languages of the Nile headwaters.

The complete rationale of linguistic change, involving as it does many of the most complex processes of psychology and sociology, has not yet been satisfactorily worked out, but there are a number of general processes that emerge with sufficient clarity. For practical purposes inherent changes may be distinguished from changes due to contact with other linguistic communities. There can be no hard line of division between these two groups of changes because every individual's language is a distinct psychological entity in itself, so that all inherent changes are likely at last analysis to be peculiarly remote or subtle forms of change due to contact. The distinction, however, has great practical value, all the more so as there is a tendency among anthropologists and sociologists to operate far too hastily with wholesale linguistic changes due to external ethnic and cultural influences. The enormous amount of study that has been lavished on the history of particular languages and groups of languages shows very clearly that the most powerful differentiating factors are not outside influences, as ordinarily understood, but rather the very slow but powerful unconscious changes in certain directions which seem to be implicit in the phonemic systems and morphologies of the languages themselves. These "drifts" are powerfully conditioned by unconscious formal feelings and are made necessary by the inability of human beings to actualize ideal patterns in a permanently set fashion.

Linguistic changes may be analyzed into pho-

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netic changes, changes in form and changes in vocabulary. Of these the phonetic changes seem to be the most important and the most removed from direct observation. The factors which lead to these phonetic changes are probably exceedingly complex and no doubt include the operation of obscure symbolisms which define the relation of various age groups to one another. Not all phonetic changes, however, can be explained in terms of social symbolism. It seems that many of them are due to the operation of unconscious economies in actualizing sounds or combinations of sounds. The most impressive thing about internal phonetic change is its high degree of regularity. It is this regularity, whatever its ultimate cause, that is more responsible than any other single factor for the enviable degree of exactness which linguistics has attained as a historical discipline. Changes in grammatical form often follow in the wake of destructive phonetic changes. In many cases it can be seen how irregularities produced by the disintegrating effect of phonetic change are ironed out by the analogical spread of more regular forms. The cumulative effect of these corrective changes is quite sensibly to modify the structure of the language in many details and sometimes even in its fundamental features. Changes in vocabulary are due to a great variety of causes, most of which are of a cultural rather than of a strictly linguistic nature. The too frequent use of a word, for instance, may reduce it to a commonplace term, so that it needs to be replaced by a new word. On the other hand, changes of attitude may make certain words with their traditional overtones of meaning unacceptable to the younger generation, so that they tend to become obsolete. Probably the most important single source of change in vocabulary is the creation of new words on analogies which have spread from a few specific words.

Of the linguistic changes due to the more obvious types of contact the one which seems to have played the most important part in the history of language is the "borrowing" of words across linguistic frontiers. This borrowing naturally goes hand in hand with cultural diffusion. An analysis of the provenience of the words of a given language is frequently an important index of the direction of cultural influence. Our English vocabulary, for instance, is very richly stratified in a cultural sense. The various layers of early Latin, mediaeval French, humanistic Latin and Greek and modern French borrowings constitute a fairly accurate gauge of the time, extent and nature of the various foreign cultural influences which have helped to mold English civilization. The notable lack of German loan words in English until a very recent period, as contrasted with the large number of Italian words which were adopted at the time of the Renaissance and later, is again a historically significant fact. By the diffusion of culturally important words, such as those referring to art, literature, the church, military affairs, sport and business, there have grown up important transnational vocabularies which do something to combat the isolating effect of the large number of languages which are still spoken in the modern world. Such borrowings have taken place in all directions, but the number of truly important source languages is surprisingly small. Among the more important of them are Chinese, which has saturated the vocabularies of Korean, Japanese and Annamite; Sanskrit, whose influence on the cultural vocabulary of central Asia, India and Indo-China has been enormous; Arabic, Greek, Latin and French. English, Spanish and Italian have also been of great importance as agencies of cultural transmission, but their influence seems less far reaching than that of the languages mentioned above. The cultural influence of a language is not always in direct proportion to its intrinsic literary interest or to the cultural place which its speakers have held in the history of the world. For example, while Hebrew is the carrier of a peculiarly significant culture, actually it has not had as important an influence on other languages of Asia as Aramaic, a sister language of the Semitic stock.

The phonetic influence exerted by a foreign language may be very considerable, and there is a great deal of evidence to show that dialectic peculiarities have often originated as a result of the unconscious transfer of phonetic habits from the language in which one was brought up to that which has been adopted later in life. Apart, however, from such complete changes in speech is the remarkable fact that distinctive phonetic features tend to be distributed over wide areas regardless of the vocabularies and structures of the languages involved. One of the most striking examples of this type of distribution is found among the Indian languages of the Pacific coast of California, Oregon, Washington, British Columbia and southern Alaska. Here are a large number of absolutely distinct languages, belonging to a number of genetically unrelated stocks, so far as we are able to tell, which nevertheless have many important and distinctive

phonetic features in common. An analogous fact is the distribution of certain peculiar phonetic features in both the Slavic languages and the Ugro-Finnic languages, which are unrelated to them. Such processes of phonetic diffusion must be due to the influence exerted by bilingual speakers, who act as unconscious agents for the spread of phonetic habits over wide areas. Primitive man is not isolated, and bilingualism is probably as important a factor in the contact of primitive groups as it is on more sophisticated levels.

Opinions differ as to the importance of the purely morphological influence exerted by one language on another in contrast with the more external types of phonetic and lexical influence. Undoubtedly such influences must be taken into account, but so far they have not been shown to operate on any great scale. In spite of the centuries of contact, for instance, between Semitic and Indo-European languages we know of no language which is definitely a blend of the structures of these two stocks. Similarly, while Japanese is flooded with Chinese loan words, there seems to be no structural influence of the latter on the former. A type of influence which is neither one of vocabulary nor of linguistic form, in the ordinary sense of the word, and to which insufficient attention has so far been called, is that of meaning pattern. It is a remarkable fact of modern European culture, for instance, that while the actual terms used for certain ideas vary enormously from language to language, the range of significance of these equivalent terms tends to be very similar, so that to a large extent the vocabulary of one language tends to be a psychological and cultural translation of the vocabulary of another. A simple example of this sort would be the translation of such terms as Your Excellency to equivalent but etymologically unrelated terms in Russian. Another instance of this kind would be the interesting parallelism in nomenclature between the kinship terms of affinity in English, French and German. Such terms as *mother-in-law*, *belle-mère* and *Schwiegermutter* are not, strictly speaking, equivalent either as to etymology or literal meaning but they are patterned in exactly the same manner. Thus *mother-in-law* and *father-in-law* are parallel in nomenclature to *belle-mère* and *beau-père* and to *Schwiegermutter* and *Schwiegervater*. These terms clearly illustrate the diffusion of a lexical pattern which in turn probably expresses a growing feeling of the sentimental equivalence of blood relatives and relatives by marriage.

The importance of language as a whole for the definition, expression and transmission of culture is undoubted. The relevance of linguistic details, in both content and form, for the profounder understanding of culture is also clear. It does not follow, however, that there is a simple correspondence between the form of a language and the form of the culture of those who speak it. The tendency to see linguistic categories as directly expressive of overt cultural outlines, which seems to have come into fashion among certain sociologists and anthropologists, should be resisted as in no way warranted by the actual facts. There is no general correlation between cultural type and linguistic structure. So far as can be seen, isolating or agglutinative or inflective types of speech are possible on any level of civilization. Nor does the presence or absence of grammatical gender, for example, seem to have any relevance for the understanding of the social organization or religion or folklore of the associated peoples. If there were any such parallelism as has sometimes been maintained, it would be quite impossible to understand the rapidity with which culture diffuses in spite of profound linguistic differences between the borrowing and giving communities. The cultural significance of linguistic form, in other words, lies on a much more submerged level than on the overt one of definite cultural pattern. It is only very rarely, as a matter of fact, that it can be pointed out how a cultural trait has had some influence on the fundamental structure of a language. To a certain extent this lack of correspondence may be due to the fact that linguistic changes do not proceed at the same rate as most cultural changes, which are on the whole far more rapid. Short of yielding to another language which takes its place, linguistic organization, largely because it is unconscious, tends to maintain itself indefinitely and does not allow its fundamental formal categories to be seriously influenced by changing cultural needs. If the forms of culture and language were then in complete correspondence with one another, the nature of the processes making for linguistic and cultural changes respectively would soon bring about a lack of necessary correspondence. This is exactly what is found to be the case. Logically it is indefensible that the masculine, feminine and neuter genders of German and Russian should be allowed to continue their sway in the modern world; but any intellectualist attempt to weed out these unnecessary genders would obviously be fruitless, for the

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normal speaker does not actually feel the clash which the logician requires.

It is another matter when we pass from general form to the detailed content of a language. Vocabulary is a very sensitive index of the culture of a people and changes of meaning, loss of old words, the creation and borrowing of new ones are all dependent on the history of culture itself. Languages differ widely in the nature of their vocabularies. Distinctions which seem inevitable to us may be utterly ignored in languages which reflect an entirely different type of culture, while these in turn insist on distinctions which are all but unintelligible to us. Such differences of vocabulary go far beyond the names of cultural objects, such as arrow point, coat of armor or gunboat. They apply just as well to the mental world. It would be difficult in some languages, for instance, to express the distinction which we feel between "to kill" and "to murder" for the simple reason that the underlying legal philosophy which determines our use of these words does not seem natural to all societies. Abstract terms, which are so necessary to our thinking, may be infrequent in a language whose speakers formulate their behavior on more pragmatic lines. On the other hand, the question of the presence or absence of abstract nouns may be bound up with the fundamental form of the language; and there exist a large number of primitive languages whose structure allows of the very ready creation and use of abstract nouns of quality or action.

There are many language patterns of a special sort which are of interest to the social scientist. One of these is the tendency to create tabus for certain words or names. A very widespread custom among primitive peoples, for instance, is the tabu which is placed not only on the use of the name of a person recently deceased but of any word that is etymologically connected in the feeling of the speakers with such a name. This means that ideas have often to be expressed by circumlocutions or that terms must be borrowed from neighboring dialects. Sometimes certain names or words are too holy to be pronounced except under very special conditions, and curious patterns of behavior develop which are designed to prevent one from making use of such interdicted terms. An example of this is the Jewish custom of pronouncing the Hebrew name for God, not as Yahwe or Jehovah but as Adonai, My Lord. Such customs seem strange to us but equally strange to many primitive communities would be our extraordinary reluctance to pronounce obscene words under normal social conditions. Another class of special linguistic phenomena is the use of esoteric language devices, such as passwords or technical terminologies for ceremonial attitudes or practises. Among the Eskimo, for example, the medicine man has a peculiar vocabulary which is not understood by those who are not members of his guild. Special dialectic forms or otherwise peculiar linguistic patterns are common among primitive peoples for the texts of songs. Sometimes, as in Melanesia, such song texts are due to the influence of neighboring dialects. This is strangely analogous to the practise among ourselves of singing songs in Italian, French or German rather than in English, and it is likely that the historical processes which have led to the parallel custom are of a similar nature. Thieves' jargons and secret languages of children may also be mentioned. These lead over into special sign and gesture languages, many of which are based directly on spoken or written speech; they seem to exist on many levels of culture. The sign language of the Plains Indians of North America arose in response to the need for some medium of communication between tribes speaking mutually unintelligible languages. Within the Christian church may be noted the elaboration of gesture languages by orders of monks vowed to silence. Not only a language or a terminology but the mere external form in which it is written may become important as a symbol of sentimental or social distinction. Thus Croatian and Serbian are essentially the same language but they are presented in very different outward forms, the former being written in Latin characters, the latter in the Cyrillic character of the Greek Orthodox church. This external difference, associated with a difference of religion, has of course the important function of preventing people who speak closely related languages or dialects but who wish for reasons of sentiment not to confound themselves in a larger unity from becoming too keenly aware of how much they actually resemble each other.

The relation of language to nationalism and internationalism presents a number of interesting sociological problems. Anthropology makes a rigid distinction between ethnic units based on race, on culture and on language. It points out that these do not need to coincide in the least—that they do not, as a matter of fact, often coincide in reality. But with the increased emphasis on nationalism in modern times the question of the symbolic meaning of race and lan-

guage has taken on a new significance and, whatever the scientist may say, the layman is ever inclined to see culture, language and race as but different facets of a single social unity, which he tends in turn to identify with such a political entity as England or France or Germany. To point out, as the anthropologist easily can, that cultural distributions and nationalities override language and race groups does not end the matter for the sociologist, because he feels that the concept of nation or nationality must be integrally imaged by the non-analytical person as carrying with it the connotation, real or supposed, of both race and language. From this standpoint it really makes little difference whether history and anthropology support the popular identification of nationality, language and race. The important thing to hold on to is that a particular language tends to become the fitting expression of a self-conscious nationality and that such a group will construct for itself in spite of all that the physical anthropologist can do a race to which is to be attributed the mystic power of creating a language and a culture as twin expressions of its psychic peculiarities.

So far as language and race are concerned, it is true that the major races of man have tended in the past to be set off against each other by important differences of language. There is less point to this, however, than might be imagined, because the linguistic differentiations within any given race are just as far reaching as those which can be pointed out across racial lines, yet they do not at all correspond to subracial units. Even the major races are not always clearly sundered by language. This is notably the case with the Malayo-Polynesian languages, which are spoken by peoples as racially distinct as the Malays, the Polynesians and the Negroes of Melanesia. Not one of the great languages of modern man follows racial lines. French, for example, is spoken by a highly mixed population, which is largely Nordic in the north, Alpine in the center and Mediterranean in the south, each of these subraces being liberally represented in the rest of Europe.

While language differences have always been important symbols of cultural difference, it is only in comparatively recent times, with the exaggerated development of the ideal of the sovereign nation and with the resulting eagerness to discover linguistic symbols for this ideal of sovereignty, that language differences have taken on an implication of antagonism. In ancient Rome and all through mediaeval Europe there were plenty of cultural differences running side by side with linguistic ones, and the political status of Roman citizenship the fact of adherence to the Roman Catholic church was of vastly greater significance as a symbol of the individual's place in the world than the language or dialect which he happened to speak. It is probably altogether incorrect to maintain that language differences are responsible for national antagonisms. It would seem to be much more reasonable to suppose that a political and national unit, once definitely formed, uses a prevailing language as a symbol of its identity, whence gradually emerges the peculiarly modern feeling that every language should properly be the expression of a distinctive nationality. In earlier times there seems to have been little systematic attempt to impose the language of a conquering people on the subject people, although it happened frequently as a result of the processes implicit in the spread of culture that such a conqueror's language was gradually taken over by the dispossessed population. Witness the spread of the Romance languages and of the modern Arabic dialects. On the other hand, it seems to have happened about as frequently that the conquering group was culturally and linguistically absorbed and that their own language disappeared without necessary danger to their privileged status. Thus foreign dynasties in China have always submitted to the superior culture of the Chinese and have taken on their language. In the same way the Moslem Moguls of India, while true to their religion, which was adopted by millions in northern India, made one of the Hindu vernaculars the basis of the great literary language of Moslem India, Hindustani. Definitely repressive attitudes toward the languages and dialects of subject peoples seem to be distinctive only of European political policy in comparatively recent times. The attempt of czarist Russia to stamp out Polish by forbidding its teaching in the schools and the similarly repressive policy of contemporary Italy in its attempt to wipe out German from the territory recently acquired from Austria are illuminating examples of the heightened emphasis on language as a symbol of political allegiance in the modern world.

To match these repressive measures there is the oft repeated attempt of minority groups to erect their language into the status of a fully accredited medium of cultural and literary expression. Many of these restored or semimanu-

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factured languages have come in on the wave of resistance to exterior political or cultural hostility. Such are the Gaelic of Ireland, the Lithuanian of a recently created republic and the Hebrew of the Zionists. In other cases such languages have come in more peacefully because of a sentimental interest in local culture. Such are the modern Provençal of southern France, the Plattdeutsch of northern Germany, Frisian and the Norwegian *landsmaal*. It is doubtful whether these persistent attempts to make true culture languages of local dialects that have long ceased to be of primary literary importance can succeed in the long run. The failure of modern Provençal to hold its own and the very dubious success of Gaelic make it seem probable that following the recent tendency to resurrect minor languages will come a renewed leveling of speech more suitably expressing the internationalism which is slowly emerging.

The logical necessity of an international language in modern times is in strange contrast to the indifference and even opposition with which most people consider its possibility. The attempts so far made to solve this problem, of which Esperanto has probably had the greatest measure of practical success, have not affected more than a very small proportion of the people whose international interests and needs might have led to a desire for a simple and uniform means of international expression, at least for certain purposes. It is in the less important countries of Europe, such as Czechoslovakia, that Esperanto has been moderately successful, and for obvious reasons. The opposition to an international language has little logic or psychology in its favor. The supposed artificiality of such a language as Esperanto or of any of the equivalent languages that have been proposed has been absurdly exaggerated, for in sober truth there is practically nothing in these languages that is not taken from the common stock of words and forms which have gradually developed in Europe. Such an international language could of course have only the status of a secondary form of speech for distinctly limited purposes. Thus considered the learning of a constructed international language offers no further psychological problem than the learning of any other language which is acquired after childhood through the medium of books and with the conscious application of grammatical rules. The lack of interest in the international language problem in spite of the manifest need for one is an excellent example of how little logic or intellectual necessity has to do with the acquirement of language habits. Even the acquiring of the barest smattering of a foreign national language is imaginatively equivalent to some measure of identification with a people or a culture. The purely instrumental value of such knowledge is frequently nil. Any consciously constructed international language has to deal with the great difficulty of not being felt to represent a distinctive people or culture. Hence the learning of it is of very little symbolic significance for the average person, who remains blind to the fact that such a language, easy and regular as it inevitably must be, would solve many of his educational and practical difficulties at a single blow. The future alone will tell whether the logical advantages and theoretical necessity of an international language can overcome the largely symbolic opposition which it has to meet. In any event it is at least conceivable that one of the great national languages of modern times, such as English or Spanish or Russian, may in due course find itself in the position of a de facto international language without any conscious attempt having been made to put it there.

EDWARD SAPIR

See: WRITING; COMMUNICATION; SYMBOLISM; CULTURE; ANTHROPOLOGY; RACE; NATIONALISM; DIALECT; ISOLATION; STANDARDIZATION; CIVILIZATION.

Consult: Sapir, E., *Language, an Introduction to the Study of Speech* (New York 1921), "Language and Environment" in *American Anthropologist*, n.s., vol. xiv (1912) 226–42, "The History and Varieties of Human Speech" in *Popular Science Monthly*, vol. lxxix (1911) 45–67, and "Sound Patterns in Language" in *Language*, vol. i (1925) 37–51; Paget, Richard, *Human Speech* (London 1930); Ogden, C. K., and Richards, I. A., *The Meaning of Meaning* (2nd rev. ed. New York 1927); Markey, John F., *The Symbolic Process and Its Integration in Children* (London 1928); Piaget, Jean, *Le langage et la pensée chez l'enfant* (Paris 1924), tr. by M. Gabain (2nd ed. New York 1932); Vendryes, J., *Le langage: introduction linguistique à l'histoire* (Paris 1921), tr. by Paul Radin, History of Civilization series (London 1925); Jespersen, Otto, *Language, Its Nature, Development and Origin* (London 1922), and *The Philosophy of Grammar* (London 1924); Whitney, W. D., *Language and the Study of Language* (7th ed. New York 1910), and *The Life and Growth of Language* (New York 1875); Paul, H., *Prinzipien der Sprachgeschichte* (5th ed. Halle 1920); Meillet, A., and Cohen, M., *Les langues du monde* (Paris 1924); Kantor, J. R., "An Analysis of Psychological Language Data" in *Psychological Review*, vol. xxix (1922) 267–309; Pillsbury, W. B., and Meader, C. L., *The Psychology of Language* (New York 1928); Boas, F., *Introduction to Handbook of American Indian Languages*, Smithsonian Institution, Bureau of American Ethnology, Bulletin no. 40, 2 vols. (Washington 1911–22); Müller, M., *Lectures on*

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Editorial Note

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The following errors in the originally published version have been corrected directly into the text printed here (page references are to the original):
p. 168, bibliography: Vendryès (correct: Vendryes)
p. 169, bibliography: *l'europe* (correct: *l'Europe*)

LA RÉALITÉ PSYCHOLOGIQUE DES PHONÈMES

Le concept de « phonème » (unité qui a une signification fonctionnelle dans la forme ou le système rigidement déterminés des sons propres à une langue), opposé au concept de « son » ou « élément phonétique » en soi (entité que l'on peut définir objectivement dans la totalité du langage parlé ou entendu), devient de plus en plus familier aux linguistes. La difficulté que beaucoup de ces derniers paraissent encore éprouver à les distinguer l'un de l'autre est appelée à disparaître, quand on aura compris qu'il n'est pas d'entité, dans l'expérience humaine, susceptible d'être définie exactement comme la somme ou le produit mécanique de ses propriétés physiques. Certes, ces propriétés physiques sont nécessaires pour nous fournir, en quelque sorte, l'indice qui nous permettra d'identifier l'entité donnée comme un point qui a une signification fonctionnelle dans un système complexe de rapports; mais l'on sait que, dans un texte donné, il est possible de négliger comme accessoires nombre de ces propriétés physiques, et l'on sait aussi qu'une propriété particulière, possédant momentanément ou par convention sociale une valeur significative inaccoutumée, peut déterminer la définition de cette entité dans une mesure hors de toute proportion avec son « poids physique ». Pourtant, si l'on admet que, dans l'expérience, toutes ces entités qui ont une signification peuvent être ainsi modifiées à partir du donné physique par leur passage à travers le filtre de la signification fonctionnelle, si l'on admet qu'il est impossible d'établir une échelle de sens nouveaux ou modifiés qui corresponde uniquement à l'échelle des accroissements physiques, on fait implicitement, consciemment ou inconsciemment, une

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distinction entre le phonème et le son dans le cadre particulier de l'expérience désigné sous le nom de langage et actualisé par la parole. Dire qu'un phonème donné ne se définit pas complètement en termes articulatoires ou acoustiques, mais doit s'encadrer dans tout l'ensemble du système des rapports sonores propres à une langue, ce n'est pas, au fond, plus étrange que d'affirmer que l'on ne nous a pas suffisamment défini un gourdin quand on nous a dit qu'il est en bois, qu'il a telle ou telle forme, telles ou telles dimensions. Nous devons saisir pourquoi un objet à peu près pareil à ce gourdin, peu différent d'aspect, n'en est pas un, et pourquoi un troisième objet, très différent de couleur, beaucoup plus long et beaucoup plus lourd que le premier, est pourtant un gourdin.

Quelques linguistes semblent estimer que le concept de phonème peut être utile dans une discussion linguistique abstraite (dans la présentation théorique de la forme d'une langue ou dans la comparaison entre les langues apparentées), mais qu'il est peu adéquat aux réalités de la parole. Cette façon de voir me paraît tout à fait contraire aux faits. De même que seul un physicien ou un philosophe définit un objet en termes de concepts abstraits comme la masse, le volume, la structure chimique, la position, seul un linguiste abstrait, un phonéticien pur et simple, réduit la parole articulée à de simples processus physiques. Pour le physicien, les trois objets de bois dont il vient d'être question sont tous les trois également dissemblables : les « gourdins » ne sont qu'intrusions romantiques dans la continuité sévère de la nature. Mais l'homme ignorant est beaucoup plus sûr de ses « gourdins » et de ses « perches » que des objets sans nom qu'il y aura lieu de définir en termes physiques. De même, dans la parole, seule l'observation attentive peut abstraire les positions phonétiques exactes et cela souvent aux dépens de nos intuitions phonétiques, phonémiques devrions-nous dire. Dans le monde physique, le sujet parlant et l'auditeur peu instruits émettent des sons et les perçoivent, mais ce qu'eux-mêmes sentent lorsqu'ils parlent ou entendent, ce sont des phonèmes. Ils organisent les éléments fondamentaux de leur expérience linguistique dans des formes fonctionnelles et esthétiques déterminées, chacune d'elles étant découpée, dans la totalité complexe de tous les rapports sonores possibles, par ses lois de rapports propres. Pour le sujet parlant ou

pour l'auditeur peu instruits, les sons, c'est-à dire les phonèmes, ne diffèrent pas dans la mesure où diffèrent des entités de cinq ou six pouces, mais dans la mesure où diffèrent les gourdins et les perches. Si le phonéticien découvre dans le courant du langage parlé quelque chose qui n'est ni un « gourdin » ni une « perche », il a le droit, en tant que phonéticien, d'établir une entité « à mi-chemin entre le gourdin et la perche ». Au point de vue fonctionnel, toutefois, cette entité est une fiction, et le sujet parlant ou l'auditeur peu instruits ne sont pas seulement amenés à la classer, d'après les ressemblances qu'elle présente, soit dans les gourdins, soit dans les perches, mais encore l'entendent et la perçoivent ainsi.

Si l'attitude phonémique est plus essentielle, au point de vue psychologique, que l'attitude plus strictement phonétique, on devrait pouvoir la découvrir dans les jugements spontanés énoncés par des sujets qui possèdent complètement leur langue au point de vue pratique, mais qui n'en ont pas une connaissance rationnelle ou consciemment systématique. On peut s'attendre à voir se produire des « erreurs » d'analyse, au jugement du moins de l'observateur « sophistiqué », erreurs qui seront caractérisées par l'inexactitude et l'inconsistance phonétiques, mais qui trahiront un penchant pour l'exactitude phonémique. Ces « erreurs », souvent négligées par le linguiste qui opère sur le concret, peuvent fournir des témoignages probants quant à la réalité dynamique de la structure phonémique du langage.

Au cours d'une longue expérience dans la notation et l'analyse de langues non écrites, indo-américaines ou africaines, je suis arrivé à réunir des preuves concrètes du fait que le sujet parlant peu instruit n'entend pas des éléments phonétiques mais des phonèmes. Ce problème prend la forme d'une expérience pratique, lorsque l'on désire apprendre à écrire sa propre langue à un indigène intelligent, c'est-à-dire à un indigène capable de comprendre et d'écrire assez bien l'anglais et doué, en outre, de quelque curiosité intellectuelle. La difficulté de la tâche varie, naturellement, avec l'intelligence de l'indigène, avec la difficulté intrinsèque de sa langue, mais elle varie également avec le degré d'« intuition phonémique » du maître. Beaucoup de linguistes bien intentionnés ont fait, à cet égard, des expériences décevantes, avec des indigènes tout à fait

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intelligents, sans jamais soupçonner que la faute n'en était pas à l'indigène mais à eux-mêmes. Il est extrêmement difficile, sinon impossible, d'apprendre à un indigène à tenir compte de variations phonétiques purement mécaniques, variations qui n'ont, pour lui, aucune réalité phonemique. Le maître, qui arrive avec une gamme toute prête de possibilités phonétiques absolues et qui, inconsciemment, en dépit de son apprentissage, tend à projeter les évaluations phonémiques de sa propre langue dans ce qu'il entend et note de la langue étrangère, peut aisément dérouter un indigène. L'indigène s'aperçoit que ce qu'on lui apprend « tinte » comme ce que ses intuitions phonologiques lui ont déjà appris, mais il se sent mal à l'aise quand on lui montre des distinctions purement phonétiques, distinctions qui lui semblent assez réelles quand il fixe son attention sur elles, mais qui disparaissent continuellement de sa conscience, parce que ses « intuitions phonologiques » ne confirment pas leur réalité objective.

Parmi les nombreux faits d'audition et d'écriture phonémiques que j'ai pu observer, au cours de mon expérience avec des indigènes et des étudiants, j'ai choisi cinq exemples que j'étudierai brièvement et que j'opposerai à l'audition et à l'écriture phonétiques. On observera que nous avons, dans chacun de ces cas, la preuve nette d'une réinterprétation inconsciente des faits objectifs, réinterprétation causée par une disposition phonologique perturbatrice qui se trouve mal adaptée à ces faits.

I

Quand je travaillais sur la langue paiute méridionale, langue du sud-ouest de l'Utah et du nord-ouest de l'Arizona, j'ai passé quelque temps à essayer d'apprendre à écrire phonétiquement sa langue à mon interprète indigène, jeune homme d'intelligence moyenne. Le paiute méridional est, au point de vue phonologique, une langue d'une rare complication, et comme à l'époque j'insistais beaucoup plus sur la correction phonétique que sur l'exactitude phonémique, je ne crois pas que je serais arrivé à la lui apprendre assez bien pour satisfaire mes exigences, même si j'avais consacré à cet effort beaucoup plus de temps que je ne l'ai fait. Comme

exemple de mot comparativement simple, je choisis *pá·βa‘* « à l'eau » (plosive labiale sourde ; *a* long accentué ; spirante bilabiale sonore ; *a* bref non accentué ; aspiration finale). J'appris à Tony à diviser le mot en syllabes et à découvrir, par une audition attentive, quels sons entraient dans la composition de chacune de ces syllabes et dans quel ordre ils y entraient, puis à essayer d'écrire le symbole exact pour chacun des éléments phonétiques découverts. A mon grand étonnement, Tony divisa alors en syllabes *pa·*, repos, *pa‘*. Je dis grand étonnement, car le paradoxe m'apparut tout de suite : Tony n' « entendait » pas d'après les sons réels, la bilabiale sonore étant objectivement très différente de la plosive initiale, mais d'après une reconstruction étymologique : *pa·-* « eau » plus la postposition **-pa‘* « à ». Le léger repos qui venait après la racine avait suffi pour écarter Tony de la forme phonétique exacte de la postposition et pour l'amener à une forme possible en théorie, mais n'existant pas dans le cas présent.

Pour expliquer le comportement de Tony, comportement qui n'était pas dû à la négligence, ni à une tendance des sujets parlant cette langue « à confondre les sons » — pour reprendre une vieille formule —, nous devons avoir recours à la phonologie du païute méridional.

Le traitement des consonnes plosives peut se résumer dans le tableau suivant :

	INITIALES	POSTVOCALIQUES			
		1. *Spirantisees.*	2. *Nasalisées.*	3. *Géminées.* a. Après voyelle sonore.	3. *Géminées.* b. Après voyelle sourde.
Labiales	*p*	β	*mp*	*p·*	*p*
Dentales	*t*	*r*	*nt*	*t·*	*t*
Gutturales	*k*	γ	*ŋk*	*k·*	*k*
Gutturales labialisées	*kw*	γ*w*	*ŋkw*	*k·w*	*kw*

Les formes postvocaliques des plosives des types 1, 2 et 3 subissent

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une nouvelle modification devant une voyelle sourde : les spirantes sonores deviennent spirantes sourdes (Φ, *ɣ*, *x*, *x*W [1] et les plosives nasalisées et géminées (*mp'*, *p'*; *nt'*, *t'*; *ŋk'*, *k'*; *ŋ*kW, *k*W) deviennent aspirées. Il est impossible de donner ici une idée systématique des processus phonologiques qui amènent les échanges de son à l'intérieur d'une série articulatoire donnée, mais il est important de savoir que les plosives nasalisées et géminées ne peuvent se trouver qu'en position postvocalique et sont largement déterminées par la nature de l'élément, racine ou suffixe, qui les précède, élément qui peut être considéré comme ayant un pouvoir inhérent de spirantisation, de nasalisation ou de gémination. La racine *pa'-* est une racine spirantisante et la spirantisation d'un **-pa'* théorique « à » en *-βa'* est parallèle à la spirantisation de *pɔ'-* « chemin » en *-βɔ-* dans un composé comme *pa'-βɔ-* « chemin d'eau ». En d'autres termes, la forme de cette langue est telle que des exemples du type *pɔ-* : *-βɔ-* conduisent au rapport **pa'* : *-βa'*[2] et que, tandis que **pa'-* « à » n'a pas d'existence réelle comme élément indépendant mais doit toujours être actualisé dans l'une des trois formes postvocaliques possibles, son existence théorique apparaît soudain quand le problème de diviser lentement un mot en syllabes est posé pour la première fois à un indigène. Il apparaît alors que le *-βa'* de la langue parlée est, en tant qu'entité syllabique indépendante sans syllabe la précédant immédiatement, perçu comme un *pa'* phonologique, dont il diffère à deux égards phonétiques importants (consonne sonore au lieu de consonne sourde, consonne spirante au lieu de consonne plosive).

Tout ceci a une influence importante sur la construction d'une graphie aussi correcte que possible du païute méridional, si par « aussi correcte que possible » nous entendons non pas la plus exacte phonétiquement, mais la plus conforme au système phonologique de cette langue. En fait, il y a des raisons de supposer, à la fois d'après les preuves internes et les données comparatives, que la forme spirantisée d'une consonne est sa forme normale et primaire

1. Le signe *x* représente le son *χ* (dans l'all. *ach*) ; W représente le *u* sourd

2. Ce **pa'* théorique, apparaissant seulement sous la forme *'a'*, *-mpa'*, *-βa'* en position postvocalique, ne doit pas être confondu avec le *-pa'* secondaire (type 3 b) <*-p'a'* (type 3 a).

après une voyelle et que ses formes nasalisée et géminée sont dues à la reapparition d'anciennes consonnes, nasales ou autres, qui avaient disparu dans la forme archaïque de l'élément qui les précédait[1]. Il s'ensuit que la postvocalique -β- est plus étroitement apparentée, fonctionnellement, à la simple initiale *p*- que ne l'est la postvocalique -*p*- (après une voyelle sourde), qui doit toujours être interprétée comme une forme secondaire de -*p*'-. Ces rapports sont brièvement indiqués dans le tableau suivant des formes théoriques non finales :

GRAPHIE PHONÉTIQUE	GRAPHIE PHONOLOGIQUE
1. pa-	pa-
2. paβa-	papa-
3. paΦA-[2]	papa-
4. pap'a-	pap'a-
5. pApa-	pap'a-
6. pap'A-	pap'a-

La graphie phonétique est plus complexe et, en un sens, plus exacte, mais elle va à l'encontre de la nature de la langue sur un point capital, car elle identifie le second *p* du type 5 avec le *p* initial, ce qui est incorrect au point de vue phonologique. D'autre part, la graphie phonologique ne sert à rien à celui qui ne possède pas la phonologie de la langue, car elle aboutit, ou paraît aboutir, à une prononciation incorrecte qui finirait, à la longue, par rendre cette langue, ainsi lue, tout à fait inintelligible à un indigène. Toutefois, pour l'indigène un peu instruit, l'équivoque n'est pas grave, car les formes phonétiques ne découlent des formes phonologiques que par l'application de lois phonétiques purement mécaniques : la spirantisation, le changement des accents, la perte de la sonorité. Il n'est pas nécessaire d'étudier ces lois[3] ici, mais on peut indiquer leurs effets dans le tableau suivant des formes finales théoriques :

1. L'analogie avec la liaison française et, plus encore, avec les trois types de traitement des consonnes en vieil-irlandais (consonnes spirantisées ou « aspirées », consonnes nasalisées ou « éclipsées », consonnes géminées) est apparente.

2. *A* représente le *a* sourd.

3. Elles sont exposées en détail dans E. SAPIR; *The Southern Paiute Language* (*Proceedings of the American Academy of Arts and Sciences*, vol. LXIV, I, 1931).

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GRAPHIE PHONÉTIQUE	GRAPHIE PHONOLOGIQUE
1. *páΦA*	*papa*
2. *paβá'*	*papa*
3. *pá·ΦA*	*pa·pa*
4. *pá·βa'* « à l'eau »	*pa·pa·*
5. *páp·A*	*pap·a*
6. *pApá'*	*pap·a·*
7. *pá·p·A*	*pa·p·a*
8. *pá·p·a'*	*pa·p·a·*
9. *maβáΦA*	*mapapa*
10. *maβáβa'*	*mapapa·*
11. *maβá·ΦA*	*mapa·pa*
12. *maβá·βa'*	*mapa·pa*
13. *maβáp·A*	*mapap·a*
14. *maβáp·a'*	*mapap·a·*
15. *maβá·p·A*	*mapa·p·a*
16. *maβáApa'*	*mapa·p·a·*
17. *MApáΦA*[1]	*map·apa*
18. *MApáβa'*	*map·apa·*
19. *MApá ΦA*	*map·a·pa*
20. *MApá·βa'*	*map·a·pa·*
21. *MApáp·A*	*map·ap·a*
22. *MApáp·a'*	*map·ap·a·*
23. *MApá·p·A*	*map·a·p·a*
24. *MApáApa'*	*map·a·p·a·*

Evidemment, dans une langue comme celle-ci, les spirantes, sonores ou sourdes, et les voyelles sourdes ne sont pas des phonèmes, mais simplement les réflexes phonétiques de plosives ou de voyelles sonores dans des conditions dynamiques déterminées. Les consonnes longues et les voyelles longues sont des sous-phonèmes. Les premières résultent de phonèmes simples (plosives) et sont la mise en œuvre de certaines possibilités phonologiques et morphologiques dans des syllabes données, possibilités qui existent ou ont existé jadis. Les dernières se décomposent phonologiquement en voyelle brève plus voyelle brève, c'est-à-dire en deux syllabes dont chacune a la longueur de l'unité de longueur (mora) et dont la seconde commence par une consonne zéro.

Le païute méridional est donc une langue dans laquelle une

1. *M* représente le *m* sourd.

structure phonémique particulièrement simple est actualisée par une structure phonétique particulièrement compliquée. L'« erreur » de Tony marque, à son insu, cette opposition..

II

Quand je travaillais sur le sarsi, langue athabaskéenne d'Alberta, Canada, je cherchai à résoudre le problème suivant : certains mots qui semblaient homonymes l'étaient-ils réellement ou présentaient-ils quelque légère différence, inappréciable immédiatement? Deux de ces homonymes — en apparence du moins — étaient *dìní* « celui-ci » et *dìní*[1] « cela fait du bruit ». Au début de notre travail, je demandai à mon interprète, John Whitney, si ces deux mots lui paraissaient avoir le même son, et il me répondit sans hésiter qu'ils étaient totalement différents. Toutefois, cette affirmation ne prouvait pas qu'il eût objectivement raison, car il est possible que des mots parfaitement homonymes donnent au sujet parlant l'illusion de différences phonétiques, à cause des différents contextes qui les encadrent ou à cause de leur position différente dans leur système paradigmatique respectif[2]. Quand je lui demandai en quoi consistait cette différence, il eut du mal à me répondre, et plus il se répétait les mots, moins il percevait nettement leurs différences phonétiques. Cependant il paraissait, tout le temps, parfaitement certain qu'il existait une différence. A diverses reprises, je crus percevoir une légère différence phonétique, par exemple :

1. L'accent grave représente un ton bas, l'accent aigu un ton haut. Le sarsi est une langue à tons.

2. Ainsi, en anglais, le mot *led* (de : to lead, mener) (ex : I *led* him away) est perçu comme ayant une voyelle dérivée de la voyelle de *lead* (ex. : I *lead* him away) et n'est par conséquent pas homonyme, psychologiquement, avec le mot *lead* (plomb) dans lequel la voyelle est perçue comme primaire, non comme dérivée (cf. en outre : « the *leading* of the windowpane », « the *leaded* glass », « the different *leads* now recognized by chemists »). L'homonymie de *led* (menais) et *lead* (plomb) est donc d'un autre ordre, au point de vue psychologique, que l'homonymie de *yard* (cour, garage : ex. : « He plays in my *yard* ») et de *yard* (mesure de longueur : ex. : « I want a *yard* of silk »), car ces derniers mots entrent dans des systèmes paradigmatiques sensiblement parallèles (ex. : « Their *yards* were too small to play in » : « I want two *yards* of silk » : « *yard* upon *yard* of railroad tracks » : « *yard* upon *yard* of lovely fabrics »). Il est probablement plus facile au sujet parlant peu instruit qui ne sait épeler ni *led*, ni *lead* de se convaincre qu'il y a une différence phonétique entre ces deux mots que de penser qu'il y en a une entre les deux mots *yard*.

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1° le *-ni* de « celui-ci » avait un ton légèrement plus bas que le *-ni* de « cela fait du bruit » ; 2° il y avait un léger accent sur le *di-* de « celui-ci » (analyse : racine *di-* « celui » plus suffixe *-ni* « une personne ») et, de même, un léger accent sur le *ni* de « cela fait du bruit » (analyse : préfixe *di-* plus racine verbale *-ni*) ; 3° le *-ni* de « celui-ci » se terminait par une voyelle pure, suivie ou non d'une brève expiration, tandis que le *-ni* de « cela fait du bruit » était suivi d'une expiration plus marquée et était proprement *-ni'*. John examina ces suppositions et les accepta parfois à contre-cœur, mais on voyait facilement qu'il n'était pas intimement convaincu. La seule supposition tangible qu'il fit lui-même était évidemment erronée : le *-ni* de « cela fait du bruit » se serait terminé par un « *t* ». John affirmait qu'il « sentait un *t* » dans la syllabe, et pourtant, quand il eut refait l'expérience plusieurs fois, il dut admettre qu'il ne pouvait pas entendre de « *t* » et qu'il ne sentait pas sa langue en prononcer un. Nous dûmes abandonner le problème, et j'en conclus, à part moi, qu'il n'y avait, à vrai dire, aucune différence phonétique entre ces mots et que John essayait de se convaincre qu'il y en avait une, simplement parce que ces mots étaient très différents, tant par leur forme grammaticale que par leur fonction, et que pour lui cette dissemblance devait nécessairement entraîner une différence phonétique.

Je ne connaissais pas assez, alors, la phonologie sarsi pour comprendre la mystérieuse théorie du « *t* ». Plus tard, il m'apparut qu'il existe en sarsi des types de voyelles finales phonologiquement distincts, voyelles douces ou simples et voyelles à possibilité consonantique, c'est-à-dire voyelles suivies à l'origine d'une consonne disparue dans la forme pausale du mot, mais qui réapparaît quand ce mot a un suffixe commençant par une voyelle ou dont on devine la présence dans d'autres phénomènes de phonétique combinatoire. Une de ces consonnes en voie de disparition est le *t'*, dont on peut considérer le *-'* comme une forme affaiblie. Or il se trouve que l'on prononce toutes les voyelles finales avec une expiration dans la forme pausale du mot et qu'il n'y a pas de différence objective entre *-'* secondaire que l'on peut symboliser par *-(t')*, zéro phonologiquement, et le *-'*, étymologiquement organique, qui peut affecter d'éléments suffixes certaines consonnes qui le suivent, ou, dans

certains cas, devenir une autre consonne comme le *t'*. Le *-ní* de « celui-ci », phonétiquement *-ni'*, dans la forme pausale du mot, est phonologiquement un simple *-ni;* le *-ni* de « cela fait du bruit », phonétiquement *-ni'* dans la forme pausale du mot, peut se représenter phonologiquement comme *-ni'* (*-nit'-*). Nous comprendrons mieux ces faits si nous étudions la nature de ces deux syllabes et si nous voyons comment elles se comportent lorsqu'elles sont suivies du suffixe relatif *-i* « celui qui... » et du suffixe inférentiel *-la*[1] « il apparaît que... » :

	plus *—i*	plus — *la*
dìni « celui-ci »	*dìná·ᵃ*[2]	*dìnila*
dìni « cela fait du bruit »	*dìnit'i*	*dìnɬia*[3]

Nous voyons tout de suite que *dìni* « celui-ci » se comporte comme un mot terminé par une voyelle douce (témoin la contraction de *i* + *i* en une voyelle prolongée et l'*l* non modifié de *-la*), tandis que *dìni* « cela fait du bruit » se comporte comme si la voyelle finale avait une possibilité consonantique sourde, qui s'inscrit en partie comme *-'* (*-'-la* se changeant comme toujours en *-ɬa*), en partie comme *-t'-*.

Il est clair que, bien que John ne fût qu'un phonéticien amateur, sa phonologie était raffinée et exacte. Sa réaction indiquait son intuition que *dìní* « celui-ci » = *dìni*, que *dìni* « cela fait du bruit » = *dìni'* et que ce dernier *-ní'* = *-nit'*. La certitude qu'avait John d'une différence en présence de l'identité objective est analogue au sentiment qu'aurait l'Anglais moyen que des mots tels que *sawed* et *soared* ne sont pas identiques phonétiquement. Il est vrai que *sawed* et *soared* se représentent phonétiquement l'un et l'autre par *sɔ·d*[4], mais les formes en *-ing* de ces deux verbes (*sawing* et

1. L'absence d'accent indique que cette syllabe a un ton moyen.

2. *a·ᵃ* est un *a* prolongé qui consiste en un *a·* long suivi d'un *a* faiblement réarticulé. Les syllabes de cette nature proviennent, en sarsi, de la contraction d'anciennes voyelles finales avec la voyelle ajoutée qui les suit. Le changement de qualité de *-i* en *-á·ᵃ* est dû à des facteurs historiques. *-ni* « une personne » est un ancien **-nĕ* (avec voyelle réduite), le relatif *-i* est l'ancien **-ĕ*; deux voyelles réduites se contractent en une voyelle ouverte longue **-é·ᵉ*; de même que l'ɛ athabaskéen devient l'*a* sarsi, cet ancien **-é·ᵉ* devient en sarsi *-á·ᵃ*.

3. *ɬ* est la spirante sourde *l*, comme dans le gallois *ll*.

4. Ces remarques s'appliquent à l'usage anglais normal et non à l'usage américain.

soaring), phonétiquement *sɔ·-iŋ* et *sɔ·r-iŋ*, et des formes de phrases comme « Saw on, my boy! » et « Soar into the sky! », concourent à produire l'impression que le *sɔ·d* de *sawed* = *sɔ·d*, mais que le *sɔ·d* de *soared* = *sɔ·r·d*. Dans le premier cas, zéro = zéro, dans le second, zéro = *r*. Les gens instruits qui discutent ces questions sans avoir fait de linguistique considèrent toujours la graphie comme responsable de ces différences d'appréciation. C'est une erreur, sans nul doute, chez la plupart des gens du moins, et c'est mettre la charrue avant les bœufs.

Si l'anglais n'était pas une langue écrite, la différence phonologique, déterminée par les systèmes fonctionnels des sons, entre des doublets tels que *sawed* et *soared* se percevrait quand même comme une illusion collective, comme une véritable différence phonétique.

III

L'élève indo-américain le plus brillant que j'aie eu en phonétique pratique est Alex Thomas. Alex Thomas écrit sa langue maternelle, le nootka[1], avec une aisance remarquable et une précision admirable. La graphie d'Alex est, naturellement, toujours phonologique dans son essence, et c'est surtout d'après l'étude de ses textes que j'ai appris à estimer, à sa juste valeur, la différence psychologique entre un son et un phonème. Quiconque connaît le mécanisme phonétique du nootka peut facilement reproduire sa graphie. Ainsi *ḥi*, phonologiquement parallèle à *si* ou *ni*, se prononce réellement *ḥɛ*, avec une voyelle qui est beaucoup plus près de l'*e* de l'anglais *met* que de celle de *sit*. Ceci vient de la nature particulière des consonnes laryngales qui favorisent un timbre d'*a* et transforment les voyelles suivantes *i* et *u* respectivement en *ɛ* et *ɔ*. Les graphies *ḥi* et *ḥu* sont très claires, car il ne peut exister phonologiquement de syllabe distincte du type *ḥɛ* ou *ḥɔ*[2].

Une autre particularité mécanique du nootka, c'est l'allongement des consonnes après une voyelle brève suivie d'une autre voyelle. Cette longueur purement mécanique n'a aucune signification morpho-

1. Cette langue est parlée sur la côte occidentale de l'île de Vancouver, Colombie Britannique.

2. *ḥ* est une spirante laryngale sourde, presque identique à l'arabe *ḥāʾ*.

logique ou phonologique et la graphie d'Alex l'ignore. Ses *hisi·k* et *hisa·* doivent donc normalement se prononcer *hisi·k*ˣ et *hɛs·a·*. Il arrive parfois pourtant qu'une consonne longue, en particulier *s·* et *š·*, naisse de la rencontre de deux consonnes morphologiquement distinctes (par exemple : *s* + *s* > *s·* ou *š* + *š* > *š·* ou, plus rarement : *s* + *s* ou *s* + *š* > *s·*). Dans ces cas-là, on n'a pas l'impression que la consonne longue soit l'allongement mécanique de la consonne simple ; on a le sentiment qu'elle est un groupe de deux consonnes identiques. Ainsi Alex écrit, par exemple, *tsi·qšit'ɬassatɬni*[1] « nous n'y sommes allés que pour parler », ce qui se décompose en *tsi·q-šitɬ-'as-sa-('a)tɬ-ni*. Le *s* de *-'as* « aller en vue de » et le *s* de *-sa* « simplement », « seulement », gardent leur indépendance phonologique, et l'intervocalique normale *-s-* de *-'as·atɬ* s'interprète comme *-ss-*. De même, *kwissiɬa* « agir différemment » se décompose en *kwis-siɬa* Pourtant, il ne semble pas y avoir de véritable différence phonétique entre l'*-s-*, phonologiquement *-s-*, de mots tels que *tɬasatɬ* « le bâton se dresse sur la plage » (*tɬa·satɬ*), qu'on prononce *tɬas·atɬ*, et l'*-s·-* de *-'assatɬ* ci-dessus. Nous avons de nouveau ici des phénomènes phonétiques identiques qui reçoivent des interprétations phonologiques différentes.

IV

Dans le premier système de graphie qu'apprit Alex, les plosives et les affriquées n'étaient pas traitées comme les nasales glottalisées ou les semi-voyelles. On représentait les premières par *p!, t!, k!, k!w, q!, q!w, ts!, tc!* (= *t̓š*), et *L!* (= *t̓ɬ*) ; les autres par *'m, 'n, 'y*, et *'w*. Ce fait s'explique par la tradition. Les plosives glottalisées et les affriquées glottalisées, en tant que types particuliers de consonnes, avaient été de bonne heure découvertes dans différentes langues par M. F. Boas et décrites comme des « fortes », c'est-à-dire des plosives et des affriquées « prononcées avec une intensité particulièrement forte d'articulation ». Les types *'m, 'n, 'l, 'y*, et *'w* ne furent découverts que beaucoup plus tard par M. Boas, d'abord dans le kwakiutl, et décomposées en nasales, sonores latérales et semi-

1. J'ai légèrement modifié la graphie d'Alex pour qu'elle s'accorde avec ma graphie actuelle, mais ces changements sont de pures substitutions mécaniques et n'affectent en rien le problème. *q* est la vélaire *k* arabe, *ɬ* est une affriquée latérale, *t'ɬ* en est la forme glottalisée.

voyelles précédées immédiatement d'une occlusion glottale. La graphie de ces consonnes (découvertes plus tard en tsimshian, en nootka, en haïda et en plusieurs autres langues, mais pas aussi répandues que celles que l'on appelle les « fortes ») rappelle comment elles ont été formées, mais la graphie des plosives glottalisées est purement conventionnelle et n'indique en aucune façon leur formation, sauf en ce qu'elle montre qu'il a fallu une énergie plus grande pour les prononcer[1]. Au point de vue phonétique, alors qu'en nootka la formation des affriquées et des plosives glottalisées est approximativement parallèle à celle des consonnes sonnantes glottalisées, elle ne l'est ni ne peut l'être entièrement. En ce qui concerne, par exemple, le *p* glottalisé, notre *ṗ* actuel et ancien *p'*, il se produit une occlusion synchronique des lèvres et des cordes vocales, une chambre à air fermée étant ainsi obtenue, puis il y a explosion brusque de l'occlusion labiale, pause et enfin ouverture de l'occlusion glottale. C'est l'ouverture de l'occlusion labiale (ou de toute autre occlusion orale) avant celle de l'occlusion glottale qui donne à ces consonnes leur caractère apparent de « clics »[2]. D'autre part, en ce qui concerne l'*m* glottalisé, notre *'m*, alors que les occlusions labiales et glottales sont synchroniques, comme dans le cas précédent[3], l'occlusion glottale doit cesser au point initial de vocalisation

1. Ceci, soit dit en passant, n'est pas nécessairement vrai. Dans certaines langues, les plosives et les affriquées glottalisées semblent demander une intensité plus grande d'articulation que les consonnes non-glottalisées correspondantes; dans d'autres langues, il n'y a pas de différence notable en ce qui concerne « l'intensité d'articulation ». Dans les langues athabaskéennes que j'ai entendues (sarsi, kutchin, hupa, navaho), les plosives et les affriquées sourdes aspirées (types *t'*, *k'*, *ts'*) sont beaucoup plus « fortes » par nature que les consonnes glottalisées correspondantes (par exemple : *t'*, *k'*, *t's*). Il n'y a pas nécessairement corrélation entre le type laryngal d'articulation (sonore, sourde, glottalisée, ou ces différents types avec aspiration) et l'intensité d'articulation (fortis, lenis). En ce qui concerne le nootka, il ne m'a pas semblé que les plosives et les affriquées glottalisées (les « fortes » de M. Boas) fussent très différentes en intensité des plosives et des affriquées ordinaires. Dans les langues qui reconnaissent une différence phonologique entre l'emphatique et le non-emphatique et possèdent, en même temps, des consonnes glottalisées, il n'y a pas de raison pour que ces dernières n'apparaissent pas à la fois dans les formes emphatiques et dans les formes non-emphatiques. Comme l'a montré le prince Trubetzkoy, quelques-unes des langues du Caucase septentrional ont, en fait, des plosives et des affriquées glottalisées, emphatiques et non-emphatiques.

2. Ces consonnes sont, semble-t-il, identiques aux « éjectives » de Daniel Jones. Il existe un autre type de plosive ou d'affriquée glottalisée, moins commun, dans lequel l'explosion orale et l'explosion glottale sont synchroniques.

3. La prononciation de *'m*, *'n*, *'w* et *'y* comme une occlusive glottale (') suivie de *m*, *n*, *w* et *y* est repoussée par l'oreille nootka comme étant incorrecte.

de l'*m*. En gros, par conséquent, *p* peut se décomposer en *p* + ', tandis que *m* peut se décomposer en ' + *m*. Ainsi, une différence de graphie telle que *p!* s'opposant à *'m*, héritée par moi de la tradition américaniste, n'était pas injustifiée du point de vue purement phonétique.

Nous en arrivons maintenant à une expérience phonologique intuitive, qui nous permettra de savoir si *ṗ* et *'m* sont ou ne sont pas des consonnes de même type. Alex a appris à écrire très facilement les consonnes de type *ṗ* et *t̓s* (nos *p!* et *ts!* primitifs), par exemple : *ṗaṗi·* « oreille » (primitivement *p!ap!ī*), *t̓sa'ak* « ruisseau » (primitivement *ts!a'ak*). A mon grand étonnement, Alex risqua *m!* dans des mots tels que *'ma·'mi·qsu* « le frère ou la sœur aînée », qu'il écrivait *m!ām!īqsu*. En d'autres termes, nous avons ici une preuve évidente de la réalité phonologique d'une classe de consonnes glottalisées comprenant à la fois le type *ṗ* (avec explosion initiale de l'occlusion orale) et le type *'m* (avec explosion initiale de l'occlusion glottale). Une graphie toujours d'accord avec la phonologie exigerait *ṗ* et *'̇m* (ou *p!* et *m!*). Répétons-le encore, l' « ignorance » phonétique d'un indigène sans instruction se montrait plus exacte, du point de vue phonologique, que la « science » des savants. Il est aisé de justifier phonétiquement l' « erreur » d'Alex. Les consonnes du type *ṗ* sont exactement analogues aux consonnes du type *'m*, parce que :

1° On les trouve toutes au début d'une syllabe, et, puisqu'aucun mot ne peut commencer par un groupe de consonnes, ceux qui parlent nootka reconnaissent que les sons *ṗ* et *'m* ne sont ni l'un ni l'autre analysables en unités phonologiques. En d'autres termes, on ne peut pas davantage isoler l'occlusive glottale dans *'m* que dans *ṗ*. De même, les affriquées et les affriquées glottalisées ne se décomposent pas en unités phonologiques.

2° Toutes les consonnes peuvent apparaître en fin de syllabe, sauf les plosives glottalisées, les affriquées glottalisées, les sonnantes glottalisées (*'m*, *'n*, *'y*, *'w*), les semi-voyelles (*y*, *w*), les nasales (*m*, *n*[1]), l'occlusive glottale (*'*), et l'*h*. Cette règle range de manière

1. *m* et *n* peuvent être suivis d'une voyelle murmurée de timbre *i* qui est une forme réduite de *a*, *u*, ou *i*. Les syllabes ou demi-syllabes de types *m*^{i} ou *n*^{i} sont précédées par *i*, produit assimilé de *a*, *u* ou *i* ; *in*^{i} et *im*^{i} résultent donc, en partie, de séries de types *ama*, *umi*, *anu*. Les simples *-am* ou *-an* deviennent *-ap*, *-at*.

plus précise les consonnes du type *'m* avec les consonnes du type *ṗ*.

3° De nombreux suffixes ont pour effet de « durcir »[1] la consonne qui les précède, en d'autres termes de l'affecter d'articulation glottale. Sous l'influence du processus de « durcissement », *p*, *t*, *k* deviennent *p'*, *t'*, *k'*, tandis que *m* et *n* deviennent *'m* et *'n*.

Par exemple, de même que les suffixes *-a'a* et *-a'a* « sur les rochers » et *-ahs* « dans un récipient » changent les racines *wi nap-* « demeurer, rester » en *wi nap'-* (ex. : *wi nap'a'a* « rester sur les rochers ») et *wik-* « ne pas être » en *wik'-* (ex. : *wik'ahs* « ne pas être dans un récipient, la pirogue est vide »), — de même *t'lum-* (alternant avec *t'lup-*) « avoir chaud, être chaud » devient *t'lu'm-* (alternant avec *t'lup'-*) (ex. : *t'lu'ma'a* « avoir chaud sur les rochers », *t'lu'mahs* « être chaud dans un récipient, il y a de l'eau chaude » ; cf. *t'lup'i'tsh* « été, saison chaude » = *t'lup-* + *'-i'tch*) et *kan-* « s'agenouiller » (ainsi : *kanil* « s'agenouiller dans la maison » devient *ka'n-* (ainsi : *ka'nahs* « s'agenouiller dans une pirogue »). Comme il ne semble pas exister de racines terminées par *h* ou *'*, le groupe *'m*, *'n*, *'w*, *'y*[3] reste comme fonctionnellement apparenté au groupe *m*, *n*, *w*, *y*, dans la mesure où le groupe du type *ṗ* s'apparente au groupe du type *p*. En d'autres termes, la morphologie confirme de manière décisive le rapport phonologique $\bar{p} : \dot{p} = m : {}'m$. C'est, me semble-t-il, ce système phonologique implicite qui fait que le son *'m* a paru à Alex suffisamment semblable au son *ṗ* pour justifier une graphie analogue de ces deux sons. Dans d'autres langues, dans lesquelles les sons ont des relations morphologiques et phonologiques différentes, un tel parallélisme de graphie ne se justifierait pas et la différence phonétique réellement existante entre *'m* et *ṗ* aurait une importance psychologique de tout autre portée.

V

Dans des conférences de phonétique pratique que j'ai faites durant plusieurs années, j'ai si souvent remarqué l'illusion phono-

1. Ce terme est emprunté à la description que donne M. Boas d'un phénomène kwakiutl équivalent.

2. Le signe *'* indique le « durcissement » provoqué par le suffixe.

3. Les détails phonologiques impliquant *w* et *y* et leurs rapports avec *'* et *y* et les autres consonnes sont trop compliqués pour être brièvement exposés ici.

tique que je vais exposer qu'il m'est impossible de ne pas formuler, pour l'expliquer, une théorie phonologique générale. J'ai noté que, lorsque les étudiants ont appris à reconnaître l'occlusive glottale comme une unité phonétique, beaucoup d'entre eux ont tendance à l'entendre après un mot terminé par une voyelle brève accentuée de timbre clair (par exemple, *a*, *ɛ*, *e*, *i*). Cette illusion ne se produit pas aussi souvent en ce qui concerne les mots terminés par une voyelle longue ou par une voyelle obscure de qualité assez mal définie (*ə*) ou par une voyelle inaccentuée. Ainsi, lorsqu'on dicte un mot n'ayant pas de sens comme *smɛ* ou *pilá*, il arrive qu'il soit parfois mal saisi et écrit *smɛ'* et *pilá'*, mais il semble que la tendance à entendre une occlusive glottale finale soit moins nette dans des mots comme *pila* ou *pilá·*. Comment expliquer ce type étrange de « surperception » auditive? Suffit-il de dire que les étudiants qui viennent d'apprendre un son nouveau aiment à s'en servir et que leur attente de ce son a pour effet de le leur faire introduire dans le cours des stimuli acoustiques qu'on leur demande d'observer? Sans doute, une explication aussi générale est-elle, dans une certaine mesure, une formule dynamique correcte; elle n'est pas assez précise pour le phonologiste, parce qu'elle ne tient pas suffisamment compte des limites de l'illusion.

Il faut se rappeler que la langue de mes étudiants est l'anglais. Nous pouvons supposer que l'illusion d'une occlusive glottale finale est due à quelque caractère de la structure phonologique de l'anglais. Mais, l'anglais n'a pas d'occlusive glottale. Comment, par conséquent, la phonologie anglaise pourrait-elle expliquer la « surperception » d'une consonne étrangère dès l'abord au génie de la langue? Je crois pourtant que les étudiants qui projetaient une occlusive glottale finale dans les mots dictés employaient un élément phonétique étranger, l'occlusive glottale, suivant un système phonologique fermement établi, mais totalement inconscient. Pour expliquer l'illusion, il faut faire appel à la fois au processus d'apprentissage avec la tendance toujours en éveil qui en découle à reconnaître ce qui a été appris, et à la phonologie anglaise. Si nous étudions les espèces de syllabes qui, en anglais, peuvent normalement constituer un monosyllabe accentué ou une syllabe finale accentuée (ou à accent secondaire), nous nous apercevrons qu'on peut les classer en trois types.

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A. Mots qui se terminent par une voyelle longue ou une diphtongue, par exemple : *sea, flow, shoe, review, apply ;*

B. Mots qui se terminent par une voyelle longue ou une diphtongue suivie d'une ou de plusieurs consonnes, par exemple : *bail, cease, dream, alcove, amount ;*

C. Mots qui se terminent par une voyelle brève suivie d'une ou de plusieurs consonnes, par exemple : *back, fill, come, vemit, object ;*

La quatrième classe possible théoriquement :

D. Mots qui se terminent par une voyelle brève, par exemple : les mots français *ami, fait*, le mot russe *xarašo*,

n'existe pas en anglais. Les sujets de langue anglaise tendent à prononcer les mots du type D d'une manière « traînante » qui les fait passer au type A (par exemple, *amī* pour *ami*). Remarquons que la possibilité, en apparence non fondée, d'une syllabe accentuée non finale se terminant par une voyelle brève (par exemple : *fiddle, butter, double, pheasant*) se justifie par la théorie anglaise de la syllabe, théorie qui place le point de division dans la consonne suivante (*d, t, b, z*, dans les exemples donnés), si bien que la syllabe accentuée de ces mots appartient réellement, au point de vue phonologique, au type C, non au type D. Des consonnes intervocaliques comme le *d* de *fiddle* ou le *z* de *pheasant*, quoiqu'elles ne soient pas longues, sont, au point de vue phonologique, « mitoyennes » ou à double face, par le fait qu'elles terminent une syllabe et en commencent une autre en même temps. Si le point de division en syllabes est reporté avant la consonne, la voyelle précédente s'allongera immédiatement, malgré sa qualité de « brève » (type A), et nous aboutirons ainsi aux prononciations dialectales américaines de mots comme *fiddle* et *pheasant*, prononciations dans lesquelles la voyelle accentuée garde sa qualité primitive, mais a été allongée jusqu'à l'unité de longueur des « voyelles longues » du type *feeble, reason, ladle*.

Nous voici donc maintenant préparés à comprendre l'illusion qui a été notre point de départ. Des mots comme *smi* et *pita* sont inconsciemment essayés comme membres possibles de la classe A ou de la classe C. Deux illusions sont possibles si l'auditeur doit être victime de son système phonologique. Puisqu'une voyelle finale brève et accentuée est une entité peu connue, elle peut être « légi-

timée », soit par une projection de longueur (*smɛ·* et *pilá·* mal entendus sont placés dans la classe A), soit par la projection d'une consonne finale après cette voyelle (classe C). Nous appellerons cette consonne imaginaire « *x* » et nous écrirons *smɛx* et *pilάx*. Or, le fait d'avoir ajouté l'occlusive glottale à notre matériel consonantique nous conduit souvent à tenter de résoudre le problème phonologique symbolisé par *smɛx* et *pilάx* en termes d'occlusive glottale et à entendre *smɛ'* et *pilά'*. L'occlusive glottale est la consonne la plus irréelle, la plus nulle en valeur, pour une oreille anglaise ou américaine, et elle est admirablement adaptée, une fois son existence admise, pour servir comme projection actualisée d'une consonne finale phonologiquement nécessaire, mais aussi peu sonore que possible. L'illusion d'une occlusive glottale finale est, essentiellement, l'illusion d'une consonne finale généralisée (« *x* ») nécessaire pour classer les mots dictés dans une catégorie connue (type C), ou, pour parler en termes plus analytiques : la phonologie anglaise crée le fond (*-x*) de l'illusion synthétique, tandis que le processus d'apprentissage le colore sous la forme de —'. L'erreur qui consiste à entendre une occlusive glottale là où il n'y en a pas, dans les mots du type D, est, au fond, une forme plus savante de l'erreur qui consiste à entendre à la dictée une occlusive glottale finale sous la forme *p*, *t*, *k*, erreur qui se produit fréquemment au premier stade d'acquisition d'une technique phonétique.

Le danger d'entendre une occlusive glottale quand le mot dicté se termine par une voyelle longue ou une diphtongue est naturellement amoindri par le fait que ces mots se conforment à un modèle anglais commun (type A). La raison pour laquelle cette erreur ne se produit pas si facilement quand on entend des mots dictés terminés par une voyelle brève inaccentuée (par exemple : *ó·nɛ*, *sú·li*), c'est que ces mots se conforment également à un modèle anglais, bien que l'échelle de qualités attribuées à la voyelle dans cette position ne soit pas aussi étendue que dans le cas où la voyelle est couverte par une consonne (par exemple : *idea*, *very*, *follow*).

(*New-Haven, 1932.*
Traduit par Mlle Dalimier).

Edward Sapir.

Editorial Note

Journal de Psychologie normale et pathologique 30 (1933), 247–265. [Reprinted in: *Essais sur le langage*, présentés par Jean-Claude Pariente, Paris: Editions de Minuit, 1969, pp. 167–188]

Corrections to the French version published in 1933

The offprint with Edward Sapir's annotations (in Philip Sapir's archives) contains the following relevant corrections (page references are to the original publication):

p. 252 l. 3–4: deviennent aspirées is marked to precede the parenthesis.
p. 256 l. 1: *ní* (twice)
p. 257 l. 1: consonne, comme
p. 257 l. 8: *-í*
p. 257 l. 13: *dìníla*
p. 257 n. 3: *l̥* is voiceless
p. 257 n. 4: américain
p. 258 n. 2: *ḥā*
p. 259 l. 1: *hisi·k*
p. 259 l. 2: *his·i·k'*
p. 259 l. 25: (= *t'š*), et *L!* (= *t'l̥*)
p. 262 l. 8: wi·nap'a'a

Although the offprint has a separate title page with Sapir's name and the title of the article, it seems to reflect the stage of a page proof: as a matter of fact, some of the handwritten corrections by Sapir concern errors that do not (/no longer) appear in the published version of the journal issue: e.g.,
p. 257 n. 3: *l̥* is voiceless
p. 257 n. 4: américain
p. 259 l. 1: *hisi·k*
p. 259 l. 2: *his·i·k'*
p. 262 l. 8: wi·nap'a'a

Apparently, the correction (by Sapir or another proofreader) concerning p. 259 l. 25 was misunderstood by the printer, since the version published in the journal issue has the diacritic sign ' (for glottalization) before the *t* in both cases.

It may thus be that the annotations for p. 252 l. 3–4 and p. 257 l. 1 reflect proof corrections by Sapir which were not taken into account by the editor/printer of the journal issue.

Pierre SWIGGERS

THE PSYCHOLOGICAL REALITY OF PHONEMES*

THE CONCEPT of the "phoneme" (a functionally significant unit in the rigidly defined pattern or configuration of sounds peculiar to a language), as distinct from that of the "sound" or "phonetic element" as such (an objectively definable entity in the articulated and perceived totality of speech), is becoming more and more familiar to linguists. The difficulty that many still seem to feel in distinguishing between the two must eventually disappear as the realization grows that no entity in human experience can be adequately defined as the mechanical sum or product of its physical properties. These physical properties are needed of course to give us the signal, as it were, for the identification of the given entity as a functionally significant point in a complex system of relatednesses; but for any given context it is notorious how many of these physical properties are, or may be, overlooked as irrelevant, how one particular property, possessing for the moment or by social understanding an unusual sign value, may have a determinedness in the definition of the entity that is out of all proportion to its "physical weight."

As soon, however, as we admit that all significant entities in experience are thus revised from the physically given by passing through the filter of the functionally or relatedly meaningful, as soon as we see that we can never set up a scale of added or changed meanings that is simply congruent to the scale of physical increments, we implicitly make a distinction, whether we know it or not, between the phoneme and the sound in that particular framework of experience which is known as language (actualized as speech). To say that a given phoneme is not sufficiently defined in articulatory or acoustic terms but needs to be fitted into the total system of sound relations peculiar to the language is, at bottom, no more mysterious than to say that a club is not defined for us when it is said to be made of wood and to have such and such a shape and such and such dimensions. We must understand why a roughly similar object, not so different to the eye, is no club at all, and why a third object, of very different color and much longer and heavier than the first, is for all that very much of a club.

Some linguists seem to feel that the phoneme is a useful enough concept in an abstract linguistic discussion—in the theoretical presentation of the form of a language or in the comparison of related languages—but that it has small relevance for the actualities of speech. This point of

* Published originally in French under the title "La Réalité psychologique des phonèmes," *Journal de Psychologie Normale et Pathologique*, 30 (1933): 247–265.

view seems the reverse of realistic to the present writer. Just as it takes a physicist or philosopher to define an object in terms of such abstract concepts as mass, volume, chemical structure, and location, so it takes very much of a linguistic abstractionist, a phonetician pure and simple, to reduce articulate speech to simple physical processes. To the physicist, the three wooden objects are equally distinct from each other, "clubs" are romantic intrusions into the austere continuities of nature. But the naïve human being is much surer of his clubs and poles than of unnamed objects to be hereinafter defined in physical terms. So, in speech, precise phonetic stations can be abstracted only by patient observation and frequently at the expense of a direct flouting of one's phonetic (one should say "phonemic") intuitions. In the physical world the naïve speaker and hearer actualize and are sensitive to sounds, but what they feel themselves to be pronouncing and hearing are "phonemes." They order the fundamental elements of linguistic experience into functionally and aesthetically determinate shapes, each of which is carved out by its exclusive laws of relationship within the complex total of all possible sound relationships. To the naïve speaker and hearer, sounds (i.e., phonemes) do not differ as five-inch or six-inch entities differ, but as clubs and poles differ. If the phonetician discovers in the flow of actual speech something that is neither "club" nor "pole," he, as phonetician, has the right to set up a "halfway between club and pole" entity. Functionally, however, such an entity is a fiction, and the naïve speaker or hearer is not only driven by its relational behavior to classify it as a "club" or a "pole," but actually hears and feels it to be such.

If the phonemic attitude is more basic, psychologically speaking, than the more strictly phonetic one, it should be possible to detect it in the unguarded speech judgments of naïve speakers who have a complete control of their language in a practical sense but have no rationalized or consciously systematic knowledge of it. "Errors" of analysis, or what the sophisticated onlooker is liable to consider such, may be expected to occur which have the characteristic of being phonetically unsound or inconsistent but which at the same time register a feeling for what is phonemically accurate. Such "errors," generally overlooked by the practical field linguist, may constitute valuable evidence for the dynamic reality of the phonemic structure of the language.

In the course of many years of experience in the recording and analysis of unwritten languages, American Indian and African, I have come to the practical realization that what the naïve speaker hears is not phonetic elements but phonemes. The problem reaches the stage of a practical test when one wishes to teach an intelligent native, say one who can

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read and write English reasonably well and has some intellectual curiosity besides, how to write his own language. The difficulty of such a task varies, of course, with the intelligence of the native and the intrinsic difficulty of his language, but it varies also with the "phonemic intuitiveness" of the teacher. Many well-meaning linguists have had disappointing experiences in this regard with quite intelligent natives without ever suspecting that the trouble lay, not with the native, but with themselves. It is exceedingly difficult, if not impossible, to teach a native to take account of purely mechanical phonetic variations which have no phonemic reality for him. The teacher who comes prepared with a gamut of absolute phonetic possibilities and who unconsciously, in spite of all his training, tends to project the phonemic valuations of his own language into what he hears and records of the exotic one may easily befuddle a native. The native realizes when what he is taught "clicks" with what his phonological intuitions have already taught him; but he is made uncomfortable when purely phonetic distinctions are pointed out to him which seem real enough when he focuses his attention on them but which are always fading out of his consciousness because their objective reality is not confirmed by these intuitions.

I have selected for brief discussion five examples of phonemic versus phonetic hearing and writing out of many which have come to me in the course of my experience with natives and students. In each of these, it will be observed, we have clear evidence of the unconscious reinterpretation of objective facts because of a disturbing phonological preparedness not precisely adjusted to these facts.

I. When working on the Southern Paiute language of southwestern Utah and northwestern Arizona I spent a little time in trying to teach my native interpreter, a young man of average intelligence, how to write his language phonetically. Southern Paiute is an unusually involved language from the phonological standpoint and, as my point of view at that time stressed phonetic accuracy rather than phonemic adequacy, I doubt if I could have succeeded in teaching him well enough to satisfy my standard even if I had devoted far more time to the effort than I did. As an example of a comparatively simple word I selected *pá·βa'* "at the water" (voiceless labial stop; stressed long *a*; voiced bilabial spirant, unstressed short *a*; final aspiration). I instructed Tony to divide the word into its syllables and to discover by careful hearing what sounds entered into the composition of each of the syllables, and in what order, then to attempt to write down the proper symbol for each of the discovered phonetic elements. To my astonishment Tony then syllabified: *pa'*, pause, *pa'*. I say "astonishment" because I at once recognized the paradox that

Tony was not "hearing" in terms of the actual sounds (the voiced bilabial *β* was objectively very different from the initial stop) but in terms of an etymological reconstruction: *pa·*: "water" plus postposition **-pa‘* "at." The slight pause which intervened after the stem was enough to divert Tony from the phonetically proper form of the postposition to a theoretically real but actually nonexistent form.

To understand Tony's behavior, which was not in the least due to mere carelessness nor to a tendency of the speakers of this language "to confuse sounds," to quote the time-worn shibboleth, we must have recourse to the phonology of Southern Paiute. The treatment of the stopped consonants may be summarized in the following table:

	Initial	Postvocalic			
		1. Spirantized	2. Nasalized	3. Geminated	
				a. After voiced vowel	b. After unvoiced vowel
Labial	*p*	*β*	*mp*	*p·*	*p*
Dental	*t*	*r*	*nt*	*t·*	*t*
Guttural	*k*	*γ*	*ŋk*	*k·*	*k*
Labialized guttural	*kw*	*γw*	*ŋkw*	*k·w*	*kw*

The postvocalic forms of the stops of types 1, 2, and 3*a* are further modified before an unvoiced vowel, the voiced spirants becoming unvoiced spirants (*θ*, *R*, *χ*, *χW*),[1] and the nasalized and geminated stops becoming aspirated (*mp‘*, *p·‘*; *nt‘*, *t·‘*; *ŋk‘*, *k·‘*; *ŋkW*, *k·W*). It is impossible here to give a systematic idea of the phonologic processes which bring about the sound interchanges within a given articulatory series, but it is important to know that the spirantized, nasalized, and geminated stops can occur only in postvocalic position and that they are largely determined by the nature of the element (stem or suffix) which precedes them and which may be said to have an inherently spirantizing, nasalizing, or geminating force. The stem *pa·-* is a spirantizing stem, and the spirantizing of a theoretical **-pa‘* "at" to *-βa‘* is parallel to the spirantizing of *pɔ·-* "trail" to *-βɔ·-* in such a compound as *pa·-βɔ·-*, "water-trail." In other words, the language is so patterned that examples of type *pɔ·-*: *-βɔ·-* lead to the proportion **pa‘*: *-βa‘*[2] and, while **pa‘* "at" does not actually exist as an independent element but must always be actualized in one of the three possible postvocalic forms, its theoretical existence suddenly comes

[1] *W* represents voiceless *w*.

[2] This theoretical **pa‘*, occurring only as *-βa‘*, *-mpa‘*, *-p·a‘* in postvocalic position, is not to be confused with secondary *-pa‘* (type 3*b*) < *-p·a‘* (type 3*a*).

to the light of day when the problem of slowly syllabifying a word is presented to a native speaker for the first time. It then appears that the *-βa'* of speech behavior, as a self-contained syllabic entity without immediately preceding syllable, is actually felt as a phonologic *pa'*, from which it differs in two important phonetic respects (voiced, not voiceless, consonant; spirant, not stop).

All this has an important bearing on the construction of a maximally correct orthography of Southern Paiute, if by "maximally correct" we mean, not most adequate phonetically, but most true to the sound patterning of the language. As it happens, there is reason to believe from both internal and comparative evidence that the spirantized form of a consonant is its normal or primary form after a vowel and that the nasalized and geminated forms are due to the emergence of old nasal and other consonants that had disappeared in the obsolete form of the preceding element.[3] It follows that the postvocalic *-β-* is more closely related functionally to a simple initial *p-* than is the postvocalic *-p-* (after unvoiced vowel), which must always be interpreted as a secondary form of *-p·-*. These relations are summarized in the following table of theoretical nonfinal forms.

Phonetic Orthography	Phonologic Orthography
1. pa-	pa-
2. paβa-	papa-
3. paθA-[4]	papa-
4. pap·a-	pap·a-
5. pApa-	pap·a-
6. pap·A-	pap·a-

The phonetic orthography is more complex and, in a sense, more adequate, but it goes against the grain of the language in one important respect, for it identifies the second *p* in type 5 with the initial *p*, which is phonologically unsound. The phonologic orthography, on the other hand, is useless for one who has not mastered the phonology of the language, as it leads, or seems to lead, to incorrect pronounciations which would have the cumulative effect of making the language, so read, entirely unintelligible to a native. To a slightly schooled native, however, there can be no serious ambiguity, for the phonetic forms result from the phonologic only by the application of absolutely mechanical phonetic laws of spiran-

[3] The analogy to French liaison and, still more, to the three types of consonantal treatment in Old Irish (spirantized or "aspirated," nasalized or "eclipsed," and geminated) is obvious.

[4] *A* represents voiceless *a*.

tizing, alternating stresses, and unvoicing. It is not necessary to deal with these laws here[5] but we can indicate their operation by the following table of theoretical final forms:

Phonetic Orthography	Phonologic Orthography
1. *páθA*	*papa*
2. *paβá'*	*papa·*
3. *pá·ϕA*	*pa·pa*
4. *pá·βa' "water-at"*	*pa·pa·*
5. *páp·A*	*pap·a*
6. *pApá'*	*pap·a·*
7. *pá·p·A*	*pa·p·a*
8. *pá·p·a'*	*pa·p·a·*
9. *maβáϕA*	*mapapa*
10. *maβáβa'*	*mapapa·*
11. *maβá·θA*	*mapa·pa*
12. *maβá·βa'*	*mapa·pa·*
13. *maβáp·A*	*mapap·a*
14. *maβáp·a'*	*mapap·a·*
15. *maβá·p·A*	*mapa·p·a*
16. *maβáApa'*	*mapa·p·a·*
17. *MApáϕA*[6]	*map·apa*
18. *MApáβa'*	*map·apa·*
19. *MApá·ϕA*	*map·a·pa*
20. *MApá·βa'*	*map·a·pa·*
21. *MApáp·A*	*map·ap·a*
22. *MApáp·a'*	*map·ap·a·*
23. *MApá·p·A*	*map·a·p·a*
24. *MApáApa'*	*map·a·p·a·*

Obviously, in such a language as this, spirants, whether voiced or voiceless, and voiceless vowels are not phonemes but are merely phonetic reflexes of stopped consonants and voiced vowels under fixed dynamic conditions. Long consonants and long vowels are sub-phonemes. The former are the resultants of simple phonemes (stopped consonants) and the operation of certain phonologic (and morphologic) latencies in given syllables, present or formerly present. The latter are phonologically resolvable into short vowel plus short vowel, i.e., into two syllables of unit length (moras), of which the second begins with a zero consonant.

Southern Paiute, then, is a language in which an unusually simple

[5] They are described in detail in E. Sapir, *The Southern Paiute Language*, Proceedings of the American Academy of Arts and Sciences, 65 (1930).

[6] *M* is voiceless *m*.

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phonemic structure is actualized by a more than ordinarily complex phonetic one. Tony's "error" unconsciously registered this contrast.

II. When working on Sarcee, an Athabaskan language of Alberta, Canada, I was concerned with the problem of deciding whether certain words that seemed homonymous were actually so or differed in some subtle phonetic respect that was not immediately obvious. One such homonymous, or apparently homonymous, pair of words was *dìnî* "this one" and *dìnî* "it makes a sound." In the early stage of our work I asked my interpreter, John Whitney, whether the two words sounded alike to him and he answered without hesitation that they were quite different. This statement, however, did not prove that he was objectively correct, as it is possible for perfectly homonymous words to give the speaker the illusion of phonetic difference because of the different contexts in which they appear or because of the different positions they occupy in their respective form systems.[8] When I asked him what the difference was, he found it difficult to say, and the more often he pronounced the words over to himself the more confused he became as to their phonetic difference. Yet all the time he seemed perfectly sure that there was a difference. At various moments I thought I could catch a slight phonetic difference, for instance, (1) that the *-nî* of "this one" was on a slightly lower tone than the *-nî* of "it makes a sound"; (2) that there was a slight stress on the *dì-* of "this one" (analysis: stem *dì-* "this" plus suffix *-nî* "person") and a similarly slight stress on the *-nî* of "it makes a sound" (analysis: prefix *dì-* plus verb stem *-nî*); (3) that the *-nî* of "this one" ended in a pure vowel with little or no breath release, while the *-nî* of "it makes a sound" had a more audible breath release, was properly *-nîʿ*. These suggestions were considered and halfheartedly accepted at various times by John, but it was easy to see that he was not intuitively convinced. The one tangible suggestion that he himself made was obviously incorrect, namely, that the *-nî* of "it makes a sound" ended in a "t."

[7] The grave accent represents a low tone, the acute accent a high one. Sarcee is a tone language.

[8] Thus, in English, the word *led* (e.g., "I *led* him away") is felt as having a vowel which has been deflected from the vowel of *lead* (e.g., "I *lead* him away") and is therefore not psychologically homonymous with the word for a metal, *lead*, in which the vowel is felt to be primary, not deflected (cf. further, "the *leading* of the windowpane," "the *leaded* glass," "the different *leads* now recognized by chemists"). The homonymy of *led* and *lead* (metal) is therefore of a different psychological order from the homonymy of *yard* ("He plays in my yard") and *yard* ("I want a *yard* of silk"), for the last two words enter into roughly parallel form systems (e.g., "Their *yards* were too small to play in" "I want two *yards* of silk"; "*yard* upon *yard* of railroad tracks" "*yard* upon *yard* of lovely fabrics"). It is probably easier for the naive speaker, who does not know how to spell either *led* or *lead* (metal), to convince himself that there is a phonetic difference between these two words than between the two words *yard*

John claimed that he "felt a *t*" in the syllable, yet when he tested it over and over to himself, he had to admit that he could neither hear a "*t*" nor feel his tongue articulating one. We had to give up the problem, and I silently concluded that there simply was no phonetic difference between the words and that John was trying to convince himself there was one merely because they were so different in grammatical form and function that he felt there ought to be a difference.

I did not then know enough about Sarcee phonology to understand the mysterious "*t*" theory. Later on it developed that there are phonologically distinct types of final vowels in Sarcee: smooth or simple vowels; and vowels with a consonantal latency, i.e., vowels originally followed by a consonant which disappears in the absolute form of the word but which reappears when the word has a suffix beginning with a vowel or which makes its former presence felt in other sandhi phenomena. One of these disappearing consonants is *-t'*, of which *-'* may be considered a weakened form. Now it happens that all final vowels are pronounced with a breath release in the absolute form of the word and that there is no objective difference between this secondary *-'*, which may be symbolized as *-(')*, phonologically zero, and the etymologically organic *-'*, which may affect certain following consonants of suffixed elements or, in some cases, pass over to one of certain other consonants, such as *t'*. The *-ní* of "this one," phonetically *-nít'* in absolute form, is phonologically simple *-nɬ*; the *-ní* of "it makes a sound," phonetically *-nɬ'* in absolute form, can be phonologically represented as *-ni'* (*-nɬt'-*). We can best understand the facts if we test the nature of these two syllables by seeing how they behave if immediately followed by suffixed relative *-ɬ* "the one who . . . " and inferential *-la*[9] "it turns out that."

		plus *-ɬ*	plus *-la*
dìnɬ	"this one"	*dìná·ª*[10]	*dìnɬla*
dìnɬ	"it makes a sound"	*dìnɬt'ɬ*	*dìnɬla*[11]

We see at once that *dìnɬ* "this one" behaves like a word ending in a smooth vowel (witness contraction of *ɬ* + *ɬ* to an over-long vowel and

[9] The lack of a tone mark indicates that this syllable is pronounced on the middle tone.

[10] *a·ª* is an over-long *a*, consisting of a long *a* followed by a weak rearticulated *a*. Syllables of this type result in Sarcee from contraction of old final vowels with following suffixed vowels. The change in quality from *-ɬ* to *-á·ª* is due to historical factors. *-nɬ* "person" is an old ˣ*-nɛ́* (with pepet vowel), relative *-ɬ* is old **-ɛ́*; two pepet vowels contract to long open **-ɛ·ᵉ*; as Athabaskan *ɛ* becomes Sarcee *a*, this older **-ɛ·ᵉ* passes into Sarcee *-á·ª*.

[11] *ɬ* is voiceless spirantal *l*, as in Welsh *ll*.

unaffected *l* of *-la*), while *dìní* "it makes a sound" acts as though the final vowel had a voiceless consonantal latency, which registers partly as *-ˁ* (*-ˁ-la* passing, as always, to *-la*), partly as *-tˁ-*.

It is clear that, while John was phonetically amateurish, he was phonologically subtle and accurate. His response amounted to an index of the feeling that *dìní* "this one" = *dìní*, that *dìní* "it makes a sound" = *dìnˁí*, and that this *-nˁí* = *-nítˁ*. John's certainty of difference in the face of objective identity is quite parallel to the feeling that the average Englishman would have that such words as *sawed* and *soared* are not phonetically identical. It is true that both *sawed* and *soared* can be phonetically represented as *sɔ·d*,[12] but the *-ing* forms of the two verbs (*sawing*, *soaring*), phonetically *sɔ·-iŋ* and *sɔ·r-iŋ*, and such sentence sandhi forms as "Saw on, my boy!" and "Soar into the sky!" combine to produce the feeling that the *sɔ·d* of *sawed* = *sɔ·-d* but that the *sɔ·d* of *soared* = *sɔ·r-d*. In the one case zero = zero, in the other case zero = *r*. Among educated but linguistically untrained people who discuss such matters differences of orthography are always held responsible for these differences of feeling. This is undoubtedly a fallacy, at least for the great mass of people, and puts the cart before the horse. Were English not a written language, the configuratively determined phonologic difference between such doublets as *sawed* and *soared* would still be "heard," as a collective illusion, as a true phonetic difference.

III. The most successful American Indian pupil that I have had in practical phonetics is Alex Thomas, who writes his native language, Nootka,[13] with the utmost fluency and with admirable accuracy. Alex's orthography, as is natural, is phonologic in spirit throughout and it is largely from a study of his texts that I have learned to estimate at its true value the psychological difference between a sound and a phoneme. Anyone who knows the phonetic mechanics of Nootka can easily actualize his orthography. Thus, *ḥi*,[14] phonologically parallel to *si* or *ni*, is actually pronounced *ḥɛ*, with a vowel which is much nearer to the *ɛ* of English *met* than to that of *sit*. This is due to the peculiar nature of the laryngeal consonants, which favor an *a*-timbre and cause the following vowels *i* and *u* to drop to *ɛ* and *ɔ* respectively. The orthographies *ḥi* and *ḥu* are entirely unambiguous because there can be no phonologically distinct syllables of type *ḥɛ* and *ḥɔ*.

Another mechanical peculiarity of Nootka is the lengthening of consonants after a short vowel when followed by a vowel. This purely

[12] These remarks apply to British, not to normal American, usage.
[13] This is spoken on the west coast of Vancouver Island, B. C.
[14] *ḥ* is a voiceless laryngeal spirant, almost identical with the Arabic *ḥā*.

mechanical length has no morphological or phonological significance and is ignored in Alex's orthography. His *hisi·k* and *ḥisa·* are, then, to be normally pronounced *his·i·k'* and *ḥɛs·a·*. It sometimes happens, however, that a long consonant, particularly *s·* and *š·*, arises from the meeting of two morphologically distinct consonants (e.g., *s* + *s* > *s·* or *š* + *š* > *š.* or, less frequently, *š* + *s* or *s* + *š* > *s·*). In such cases the long consonant is not felt to be a mechanical lengthening of the simple consonant but as a cluster of two identical consonants, and so we find Alex writing, for example, *tsi·qšit'łassatłni*[15] "we went there only to speak," to be analyzed into *tsi·qšitł-'as-sa-('a)tł-ni*. The *s* of *-'as* "to go in order to" and the *s* of *-sa* "just, only" keep their phonologic independence and the normal intervocalic *-s·-* of *-'as·atł* is interpreted as *-ss-*. Similarly, *kwis-siła* "to do differently," to be analyzed into *kwis-siła*. It does not seem, however, that there is an actual phonetic difference between the *-s-* (phonologically *-s-*) of such words as *tłasatł* "the stick takes an upright position on the beach" (= *tła-satł*), pronounced *tłas·atł*, and the *-s·-* of *-'assatł* above. Here again we have objectively identical phonetic phenomena which receive different phonologic interpretations.

IV. In the earlier system of orthography, which Alex was taught, the glottalized stops and affricatives were treated differently from the glottalized nasals and semivowels. The former were symbolized as *p!*, *t!*, *k!*, *k!w*, *q!*, *q!w*, *ts!*, *tc!* (= *ṫš*), and *L!* (= *ṫł*); the latter as *'m*, *'n*, *'y*, and *'w*. The reason for this was traditional. The glottalized stops and affricatives, as a distinctive type of consonants, had been early recognized by Dr. F. Boas in many American Indian languages and described as "fortes," that is, as stops and affricatives "pronounced with increased stress of articulation." The type *'m*, *'n*, *'l*, *'y*, and *'w* was not recognized by Dr. Boas until much later, first in Kwakiutl, and described as consisting of nasal, voiced lateral, or semivowel immediately preceded by a glottal closure. The orthography for these consonants (later discovered in Tsimshian, Nootka, Haida, and a number of other languages, but not as widely distributed as the so-called "fortes") suggested their manner of formation, but the orthography for the glottalized stops and affricatives was purely conventional and did not in any way analyze their formation except to suggest that more energy was needed for their pronunciation.[16] As a pure matter of phonetics, while the Nootka glottalized

[15] I have slightly modified Alex's orthography to correspond to my present orthography, but these changes are merely mechanical substitutions, such as *tł* for ʟ, and in no way affect the argument. *q* is velar *k* (Arabic *ḳ*), *tł* is a lateral affricative, *ṫł* its glottalized form.

[16] This, incidentally, is not necessarily true. In some languages the glottalized stops and affricatives seem to be somewhat more energetic in articulation than the corresponding unglottalized consonants, in others there is no noticeable

stops and affricatives are roughly parallel in formation with the glottalized sonantic consonants, they are not and cannot be entirely so. In a glottalized *p*, for instance, our present *ṗ* and former *p!*, there is a synchronous closure of lips and glottal cords, a closed air chamber is thus produced between the two, there is a sudden release of the lip closure, a moment of pause, and then the release of the glottal closure. It is the release of the lip (or other oral) closure in advance of the glottal closure that gives consonants of this type their superficial "click-like" character.[17] On the other hand, in a glottalized *m*, our *'m*, while the lip closure and glottal closure are synchronous as before,[18] the glottal closure must be released at the point of initial sonancy of the *m*. Roughly speaking, therefore, *ṗ* may be analyzed into *p* + ', while *'m* may be analyzed into ' + *m*. Such an orthographic difference as *p!* versus *'m*, therefore, which I had inherited from the Americanist tradition, was not unjustified on purely phonetic grounds.

We now come to the intuitive phonologic test whether *ṗ* and *'m* are consonants of the same type or not. Alex learned to write consonants of type *ṗ* and *ṫs* very readily (our earlier *p!* and *ts!*), e.g., *ṗapi·* "ear" (earlier *p!ap!ī*), *ṫsa'ak* "stream" (earlier *ts!a'ak*). To my surprise Alex volunteered *m!* in such words as *'ma·'mi·qsu* "the older [brother or sister]," which he wrote *m!ām!īqsu*. In other words, we had valuable evidence here for the phonologic reality of a glottalized class of consonants which included both type *ṗ* (with prior release of oral closure) and type *'m* (with prior release of glottal closure). A phonologically consistent orthography would require *ṗ* and *ṁ* (or *p!* and *m!*). Once more, a naive native's phonetic "ignorance" proved phonologically more accurate than the scientist's "knowledge." The phonologic justification for Alex's

difference so far as "stress of articulation" is concerned. In the Athabaskan languages that I have heard (Sarcee, Kutchin, Hupa, Navaho) the aspirated voiceless stops and affricatives (of type *t'*, *k'*, *ts'*) are far more "fortis" in character than the corresponding glottalized consonants (e.g., *t*, *k'*, *ts*). There is no necessary correlation between laryngeal type of articulation (voiced, voiceless, glottalized; or any of these with aspiration) and force of articulation (fortis, lenis). So far as Nootka is concerned, it did not seem to me that the glottalized stops and affricatives (Boas' "fortes") were significantly different in emphasis from the ordinary stops and affricatives. In such languages as recognize a phonological difference of emphatic and nonemphatic and, at the same time, possess glottalized consonants, there is no reason why the glottalized consonants may not appear in both emphatic and nonemphatic form. As Prince Trubetzkoy has shown, some of the North Caucasic languages, as a matter of fact, possess both emphatic and nonemphatic glottalized stops and affricatives.

[17] These consonants are apparently identical with the "ejectives" of Daniel Jones. There is another, apparently less common, type of glottalized stop or affricative in which the oral and glottal releases are synchronous.

[18] The pronunciation of *'m*, *'n*, *'w*, and *'y* as a simple sequence of glottal stop (') plus *m*, *n*, *w*, and *y* is rejected by the Nootka ear as incorrect.

"error" is not difficult. Consonants of type *ṗ* are entirely analogous to consonants of type *'m* for the following reasons.

1. Each occurs at the beginning of a syllable and, since no word can begin with a cluster of consonants, both *ṗ* and *'m* are felt by Nootka speakers to be unanalyzable phonologic units. In other words, the glottal stop can no more easily be abstracted from *'m* than from *ṗ*. Similarly, the affricatives and glottalized affricatives are phonologically unanalyzable units.

2. All consonants can occur at the end of a syllable except glottalized stops and affricatives, glottalized sonantic consonants (*'m*, *'n*, *'y*, *'w*), semivowels (*y*, *w*), nasals (*m*, *n*),[19] the glottal stop ('), and *h*. This rule throws consonants of type *'m* more definitely together with consonants of type *ṗ*.

3. Many suffixes which begin with a vowel have the effect of "hardening"[20] the preceding consonant, in other words, of glottally affecting it. Under the influence of this "hardening" process *p*, *t*, *k* become *ṗ*, *ṫ*, *ḳ*, while *m* and *n* become *'m* and *'n*. For example, just as the suffixes *'-a'a*[21] (*'-a·'a*) "on the rocks" and *'-aḥs* "in a receptacle" change the stem *wi·nap-* "to stay, dwell" to *wi·naṗ-* (e.g., *wi·naṗa'a* "so stay on the rocks") and *wik-* "to be not" to *wik'-* (e.g., *wiḳaḥs* "to be not in a receptacle, a canoe is empty"), so *t'ɬum-* (alternating with *t'ɬup-*) "to be hot" becomes *t'ɬu'm-* (alternating with *t'ɬuṗ-*)(e.g., *tɬu'ma·'a* "to be hot on the rocks" and *ɬu'maḥs* "to be hot in a receptacle, there is hot water"; compare *ɬupi·tšḥ* "summer, hot season" = parallel *ɬup-* + *'-i·tcḥ* "season") and *kan-* "to kneel" (e.g., *kanił* "to kneel in the house") becomes *ka'n-* (e.g., *ka'naḥs* "to kneel in a canoe"). As there seem to be no stems ending in *h* or ', the group *'m*, *'n*, *'w*, *'y*[22] is left over as functionally related to the group *m*, *n*, *w*, *y* in the same sense as the group exemplified by *ṗ* is related to the group exemplified by *p*. Morphology, in other words, convincingly supports the phonologic proportion *p*:*ṗ* = *m*:*'m*. It is maintained that it was this underlying phonologic configuration that made Alex hear *'m* as sufficiently similar to *ṗ* to justify its being written in an analogous fashion. In other languages, with different phonologic and morphologic understandings, such a parallelism of orthography might not be justified at all and the phonetic differences that actually

[19] *m* and *n* may be followed by a murmured vowel of *i*-timbre which is a reduced form of *a*, *u*, or *i*. Syllables or half-syllables of type m^i or n^i are preceded by *i*, an assimilated product of *a*, *u* or *i*; in^i and im^i result therefore, in part, from sequences of type *ama*, *umi*, *anu*. Simple *-em* or *-an* become *-ap*, *-at*.

[20] A term borrowed from Boas' equivalent Kwakiutl phenomenon.

[21] The symbol ' indicates the "hardening" effect of a suffix.

[22] The phonologic details involving *'w* and *'y* and their relation to *w* and *y* and other consonants are too intricate for a summary statement in this place.

obtain between *'m* and *ṕ* would have a significantly different psychologic weighting.

V. In a course in practical phonetics which I have been giving for a number of years I have so often remarked the following illusion of hearing on the part of students that there seems no way of avoiding a general phonologic theory to explain it. I find that, after the students have been taught to recognize the glottal stop as a phonetic unit, many of them tend to hear it after a word ending in an accented short vowel of clear timbre (e.g., *a*, *ɛ*, *e*, *i*). This illusion does not seem to apply so often to words ending in a long vowel or an obscure vowel of relatively undefined quality (ə) or an unaccented vowel. Thus, a dictated nonsense word like *smɛ* or *pilá* would occasionally be misheard and written as *smɛ'* and *pilá'* but there seems far less tendency to hear a final glottal stop in words like *pila or pilá·*. What is the reason for this singular type of "overhearing?" Is it enough to say that students who have learned a new sound like to play with it and that their preparedness for it tends to make them project its usage into the stream of acoustic stimuli to which they are asked to attend? No doubt such a general explanation is a correct dynamic formula so far as it goes but it is not precise enough for a phonologist because it does not take sufficient account of the limitations of the illusion.

It must be remembered that the language of my students is English. We may therefore suspect that the illusion of a final glottal stop is due to some feature in the phonologic structure of English. But English has no glottal stop. How, then, can English phonology explain the overhearing of a consonant which is alien to its genius to begin with? Nevertheless, I believe that the students who projected a final glottal stop into the dictated words were handling an exotic phonetic element, the glottal stop, according to a firmly established but quite unconscious phonologic pattern. It requires both the learning process, with its consequent alert preparedness to recognize what has been learned, and English phonology to explain the illusion. If we study the kinds of syllables in English which may normally constitute an accented monosyllabic word or an accented (or secondarily accented) final syllable of a word, we find that they may be classified into three types:

A. Words ending in a long vowel or diphthong, e.g., *sea*, *flow*, *shoe*, *review*, *apply*.

B. Words ending in a long vowel or diphthong plus one or more consonants, e.g., *ball*, *cease*, *dream*, *alcove*, *amount*.

C. Words ending in a short vowel plus one or more consonants, e.g., *back*, *fill*, *come*, *remit*, *object*.

The theoretically possible fourth class:

D. Words ending in a short vowel, e.g, French *fait, ami;* Russian *xărášɔ'*

does not exist in English. English-speaking people tend to pronounce words of type D in a "drawling" fashion which transfers them to type A (e.g., *amí·* for *ami*). Observe that the apparently inconsistent possibility of a nonfinal accented syllable ending in a short vowel (e.g., *fiddle, butter, double, pheasant*) is justified by the English theory of syllabification, which feels the point of the syllabic division to lie in the following consonant (*d, t, b, z,* in the examples cited), so that the accented syllables of these words really belong phonologically to type C, not to type D. Intervocalic consonants like the *d* of *fiddle* or *z* of *pheasant,* in spite of the fact that they are not phonetically long, are phonologically "flanking" or two-faced, in that they at one and the same time complete one syllable and begin another. Should the point of syllabic division shift back of the consonant, the preceding vowel at once lengthens in spite of its "short" quality (type A), and we thus get dialectic American pronunciations of words like *fiddle* and *pheasant* in which the accented vowel keeps its original quality but has been lengthened to the unit length of "long vowels" of type *feeble, reason,* and *ladle.*

We are now prepared to understand the illusion we started with. Such words as *smɛ* and *pilá* are unconsciously tested as possible members of class A or class C. Two illusions are possible, if the hearer is to be a victim of his phonologic system. Inasmuch as a final accented short vowel is an unfamiliar entity, it can be "legitimized" either by projecting length into it (misheard *smɛ·* and *pilá·* fall into class A) or by projecting a final consonant after it (class C). We shall call this imaginary consonant "*x*" and write *smɛx* and *pilax*. Now the fact that one has added the glottal stop to his kit of consonantal tools leads often to the temptation to solve the phonologic problem symbolized as *smɛx* and *pilax* in terms of the glottal stop and to hear *smɛ'* and *pilá'*. The glottal stop is the most unreal or zerolike of consonants to an English or American ear and is admirably fitted, once its existence has been discovered, to serve as the projected actualization of a phonologically required final consonant of minimum sonority. The illusion of the final glottal stop is essentially the illusion of a generalized final consonant ("*x*") needed to classify the dictated words into a known category (type C). Or, to speak more analytically, English phonology creates the groundwork (*-x*) of the synthetic illusion, while the learning process colors it to the shape of -'. The error of hearing a glottal stop where there is none, in words of type D, is fundamentally a more sophisticated form of the same error as hearing a dictated final glottal

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stop as *p* or *t* or *k*, which occurs frequently in an earlier stage of the acquiring of a phonetic technique.

The danger of hearing a glottal stop when the dictated word ends in a long vowel or diphthong is of course rendered very unlikely by the fact that such words conform to a common English pattern (type A). The reason why the error does not so easily occur in hearing dictated words ending in an unaccented short vowel (e.g., *o·nɛ*, *si·li*) is that such words, too, conform to an English pattern, though the range of the qualities allowed a vowel in this position is not as great as when the vowel is covered by a following consonant (e.g., *idea*, *very*, *follow*).

Editorial Note

In: Edward Sapir, *Selected Writings in Language, Culture, and Personality*. Edited by David G. Mandelbaum. Berkeley: University of California Press, 1949. pp. 46–60. [Reprinted in: V. Becker Makkai ed., *Phonological Theory: Evolution and Current Practice*. New York: Holt, Rinehart & Winston, 1972, pp. 22–31]

Editorial notes on the English version published in 1949

Of the text printed in the *Selected Writings* (Berkeley, 1949), pp. 46–60, a typescript with handwritten corrections by Edward Sapir has been preserved. There are a number of differences between this typescript version and the text published by David G. Mandelbaum in 1949. A number of divergences in the published version correspond to the American Indian forms as they are given in the published French version of 1933. The typescript version also contains a few (self-correcting) errors not corrected by Sapir (but absent from the 1949 published version).

The following divergences between the posthumously published text of 1949 and the typescript version (= TS) may be of interest to the reader; except for cases of stylistic changes, the reading of the typescript as corrected by Sapir should be followed, although in three cases the reading of the typescript is still not the correct one, because of diacritics that are missing. Page references are to the 1949 published text reprinted here.

p. 47 l. 12–13: In the physical world the naïve speaker and hearer
TS: The naive speaker and hearer, in the physical world

p. 48 l. 36-38: I instructed Tony to divide the word into its syllables and to discover by careful hearing what sounds entered into the composition of each of the syllables, and in what order
TS: I instructed Tony to divide the word into its syllables and to discover by careful hearing what sounds, and in what order, entered into the composition of each of the syllables,

p. 49 l. 3 below table: (θ, R, χ, χW)
TS: (ɸ, R, χ, χW)

p. 50 l. 14: obsolete form
TS (handwritten correction): absolute form

p. 50 table, no. 3: paθA-
TS: paɸA-

p. 50 l. 6 below the table: pronounciations
TS (handwritten correction): pronunciations

p. 50 l. 9-10 below the table: phonologic only
TS (handwritten correction): phonologic ones

p. 51 table, no. 1: páθA
TS: páɸA

p. 53 l. 7: to be a difference.
TS: to be one.

p. 55 l. 6: *š* + s or s + *š* > s·
TS: *š* + s > s· or s + *š*

p. 55 l. 9: tsi·qšit'ɬassatɬni
TS: tsi·qšit'ɬ as satɬni

p. 55 l. 10: tsi·-qšitɬ-'as-sa-('a)tɬ-ni
TS: tsi· q-šitɬ-'-as-sa-(a)tɬ-ni [**to be corrected as:** tsi·q-šitɬ-'-as-sa-('a)tɬ-ni]

p. 56: n. 16 l. 3 fortis
TS: fortes

p. 56 n. 16 l. 11–12: why the glottalized consonants may not appear
TS: why the latter may not appear

p. 56 l. 12: ṕ
TS: p'
also: p. 56 l. 16, l. 18, l. 23, l. 25; p. 57 l. 1, l. 4, l. 6, l. 13

p. 57 l. 22: tɬu'ma·'a
TS: tɬuma·a [**to be corrected as:** t'ɬu'ma·'a]

p. 57 l. 24: tɬ́up- + ´-i·tcẖ
TS: tɬ́up- + -i·tsh [**to be corrected as:** ´i·tšh]

p. 58 l. 22: of my students
TS: of the students

p. 59 l. 5: amí·
TS: amí

p. 59 l. 3 from below: shape of -'
TS: shape of -‘

p. 60 l. 7: o·nɛ
TS: ó·nɛ

THE RELATION OF AMERICAN INDIAN LINGUISTICS TO GENERAL LINGUISTICS*

EDWARD SAPIR

THE IMPORTANCE of American Indian linguistics to the general linguist is so obvious that it does not need to be stressed. A few indications, however, of the light thrown by American Indian languages on general problems of linguistics may be welcome. Many indications of the general importance of the Americanist's field have been given by Dr F. Boas in the "Introduction" to his *Handbook of American Indian Languages.*[1]

One of the problems which the general linguist has to deal with is the distribution of phonetic elements. It has become well known that sounds and groups of sounds have their geographical distribution like any other cultural trait, and from the strictly anthropological point of view there is no reason to suppose that these distributions would necessarily follow the lines given by a genetic classification of languages. It so happens that the languages of native America are a particularly fruitful field for this type of research. It is remarkable, for instance, that the phonetic systems of the languages spoken along the Pacific coast south of the Eskimo area have many characteristics in common in spite of the fact that they are far from being members of the same genetic group. The phonetics of Tsimshian, for instance, agrees in numerous peculiar respects with that of such languages as Kwakiutl and Nootka, yet it is almost certain that the genetic affiliations of Tsimshian are with languages far to the south and that its genetic relationship to Kwakiutl and Nootka is, at best, exceedingly remote and in all probability non-existent. Analogous phenomena have from time to time been

* This posthumous manuscript from the Boas Collection of the American Philosophical Society is made available through the generosity of the Society. C. F. Voegelin and Morris Swadesh kindly brought our attention to it—Editor.

[1] Bulletin, Bureau of American Ethnology, no. 40, part I, 1911.

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pointed out in other parts of the world. Thus, Armenian owes certain of its phonetic peculiarities to contact with Caucasic languages in spite of the fact that it is itself a typical Indo-European language. The American Indian field may very appropriately be thought of as an object lesson of the greatest importance for a general theory of historical phonetics, for the irregular distributions of many of the linguistic stocks on the continent has been especially favorable for the spread of phonetic features far beyond the confines of a single genetic group. Experience gained from a study of American Indian data must have important methodological consequences for judgments on phonetic history in such fields as Indo-European and Hamitic-Semitic.

What applies to phonetics is, to a considerable extent, also true of morphological features. In general, we may operate with the hypothesis that a given type of linguistic structure tends to maintain itself for exceedingly long periods of time. But it cannot be denied that important re-formations can be, and often have been, due to contact between fundamentally alien languages. The American Indian languages that we have sufficient knowledge of seem to behave very differently in this respect. Thus, the languages of the Athapaskan group are singularly conservative in form as well as in phonetics and vocabulary in spite of their enormous and irregular spread. There is far less difference in form between, say, Chipewyan, Hupa, and Navaho, three languages selected from the Northern, Pacific, and Southern divisions of Athapaskan, respectively, than between Baltic and Slavic within the Indo-European group. Here we have languages that seem to have been significantly resistant to exotic influences. On the other hand, there are important morphological characteristics which seem to have diffused over a continuous territory occupied by languages of alien stocks. A good example of such a distribution is the presence of instrumental prefixes in the verb in the Maidu (north central California) and Takelma (southwestern Oregon) languages of the Penutian group, in which such prefixes are not ordinarily found. It seems very probable that we have here an influence exerted by the Hokan languages such as Shasta and Karok (northwestern California) on neighboring languages. These instrumental prefixes are further found in Shoshonean, which adjoins the area under discussion to the east. A careful study of a distribution of this sort should help materially in clarifying our ideas about the relative persistence or non-persistence of grammatical features. Even if the importance of diffusion of formal linguistic features as an explanation of linguistic resemblances may not be as far-reaching as some diffusionists suppose, it nevertheless remains true that the intercrossing influence of diffusion must be taken into account very much more seriously than is done by students

of comparative and historical grammar in the Old World. Here again American Indian linguistics seems destined to become an important object lesson in linguistic methodology.

Far more important, however, than the suggested importance of American Indian linguistics for problems of diffusion is the intrinsic analysis of these languages. As is well known, they are unusually variant in form from each other, and it is perhaps not too much to say that there is hardly a morphological type which is not illustrated in the American field. It has often been pointed out that many of these languages are highly synthetic or polysynthetic in form, but on the other hand there are not a few languages in native America which are highly analytic in structure. In view of the confusion which still prevails in regard to the relation of linguistic form to race and cultural backgrounds, it is peculiarly important to survey the American Indian field, for within it we find maximal morphological divergences within a relatively homogeneous race and with complete lack of correspondence with the cultural groupings of the ethnologist. This means that American Indian linguistics stands as a silent refutation of those who try to establish an innate psychological rapport between cultural and linguistic forms. Surely, the content of language reflects culture with painstaking accuracy but its morphological outlines seem to be essentially independent of such cultural influence. Just what this means in a psychological sense it is for the future to determine. For the present it is obviously important to gather the abundant materials on this point. The American Indian languages are in a peculiarly favorable position to give us the required data. It is possible to find areas in native America in which a relatively uniform culture is shared by peoples who speak languages that present the very widest possible contrasts of form. Such entities as the West [Northwest] Coast culture area, the Plains culture area, and the Pueblo culture area are in flat contradiction to the linguistic affiliations of the languages spoken within them. If, therefor, there are fundamental relations between cultural and formal linguistic phenomena, they cannot be of the type which so many linguistic philosophers and social scientists are in the habit of discovering. Here again American Indian linguistics is an invaluable test field for solid linguistic thinking.

A linguist who is familiar with the forms of only one circumscribed group of languages, such as Indo-European or Semitic, necessarily runs the risk of universalizing formal features which are after all local in their distribution, or of rejecting as unlikely conceptual peculiarities which are abundantly attested outside of his special group of languages. American Indian languages give abundant opportunity to correct both of these possible misconceptions. The Indo-

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Europeanist, for instance, will find nominal classifications based on sex gender sparely represented in America and this negative fact cannot but give him a new respect for the possible genetic value of the presence of sex gender in Indo-European and Hamitic-Semitic. Again, the rarity in America of formal comparatives and superlatives in the adjective gives this formal feature of Indo-European a contrastive emphasis that it might not otherwise seem to possess. On the other hand, the development of secondary cases from postposed locative particles, ordinarily felt to be a rather strange feature of certain Indo-European languages, finds numerous parallels in other languages all over the world, including those of America. The conceptual separation of aspect and tense comes out very clearly in many American languages, whereas the two categories tend to be blended in various ways in Indo-European and Semitic. These are but a few out of hundreds of examples of what may be learned from American Indian languages of basic linguistic concepts, or rather of the grammatical treatment of basic concepts. There is hardly a classificatory peculiarity which does not receive a wealth of illumination from American Indian languages. It is safe to say that no sound general treatment of language is possible without constant recourse to these materials.

A word may be said on the value of field work in American Indian linguistics for those not planning to occupy themselves professionally with them. Modern training in linguistics must emphasize more and more the importance of direct contact with speech rather than the conventionally recorded language. It is of great pedagogical importance for a young Indo-Europeanist or Semitist to try to work out inductively the phonetic system and morphology of some language which is of an utterly different structure from those that he has been studying. Such an experience frees him from numerous misconceptions and gives him the very best evidence that he could wish for the phonetic and grammatical consistency of a language that is handed down entirely by word of mouth. One may go so far as to say that only students who have had this type of experience have a thoroughly realistic idea of what language is. For this type of training nothing more suitable could be thought of than an investigation into one or more of the languages of native America. They are readily accessible and competent interpreters can be found in most cases. It may be pointed out that E. Sapir's *Language* and L. Bloomfield's *Language* owe not a little to the personal experience of the writers in the inductive study of American Indian languages.

Editorial Note

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Philip SAPIR

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[1] In his encyclopedia article "Philology" Sapir mentions "Cassirer, Delafosse and Ogden and Richards", as "philosophers of standing" who have studied linguistic problems. It is rather unlikely that Jules Delafosse is meant here, and one may wonder whether in fact Sapir was not thinking of Henri Delacroix, a student of Bergson.

[2] In Z. Harris's review of *Edward Sapir: Selected Writings in Language, Culture, and Personality*, one should correct "E.T. Guthrie" into "E.R. Guthrie".

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[3] This is an error in Sapir's text, the name of the secretary of the Board actually spelled in reverse (Jean Henri Samuel) *Formey*.

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[1] See the definition of this term given on p. 332.

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[2] Further subdivided into "abstract" and "specialized".
[3] Further subdivided into "abstract" and "specialized" (the latter will further subdivide into "one-term sets", "two-term sets", "three-term sets", "four-term sets").

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[5] See the definition of this term given on p. 332.
[6] See the definition of this term given on p. 332.
[7] Subdivided into independent indicative pronouns and referential indicative pronouns.
[8] Subdivided into simple relative pronouns and compound relative pronouns.

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[9] For the different types of quantification see p. 291 (fn. 31 and p. 300 – [illegible] suitable is mistaken in this Index, since the other types are not dealt with explicitly by Sapir.

[10] See the definition of this term given on p. 332.

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[11] See also the 'Glossary of technical terms' (p. 303) concerning the conceptual field of totality.
[12] For the general subdivision of totalizers, see Sapir's scheme on p. 308.

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* In this Index of Languages the names of (standard) languages, of dialects, and the generalizing names for language continua (e.g., Chinese) and for complex historical-linguistic entities (e.g., Assyrian, Egyptian, Hittite) are printed in normal type. Names of genetic clusters (subgroups, families, stocks and phyla; e.g., *Bantu*, *Indo-European*, *Hokan-Siouan*, *Aztek-Tanoan*), including the names of highly suspect regroupings (such as *Japhetic*) are printed in italics. Names of geographical/areal clusters are followed by an asterisk (e.g., Mediterranean*). For the term "Ostyak", see the entry below (and the reference to p. 178). The hyperonym "international auxiliary language" is not included here, but can be found in the Index of Concepts. – References are to the pages of the present volume, not to the pagination of the original texts.

[1] Sapir most frequently uses the spelling Algonkin or Algonkian. – None of the occurrences refers to the dialect of Ojibwa called *Algonquin*.

[2] This is the spelling used by Sapir in the papers reprinted in this volume.

[3] In Sapir's writings the term "(American) Indian languages" mostly refers to the North American languages.

[4] This is the term traditionally used for Vietnamese.

[5] Other spellings: Athapaskan; Athabaskan. – Sapir also uses 'Déné' as synonym for 'Athasbaskan' (p. 198).

[6] Or 'Caucasian'. The lemma 'Caucasic' covers the designations 'languages of the Caucasus' and 'languages spoken in the Caucasus' used by Sapir (p. 141–142, 199).

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[7] Sapir uses the spellings Corean (p. 177) and Korean (p. 512).
[8] Sapir also uses the term *Ugro-Finnic* (p. 511, 513).

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* Sapir uses the terms *Indo-Chinese, Sino-Tibetan, Sinic* and *Sinitic* as synonyms (see p. 177).

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Zandawe → Sandawe

[10] Sapir uses the spelling Tokharian (p. 201).
[11] This is the spelling used by Sapir (see p. 140). Newman uses the spelling Uto-Aztecan.

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